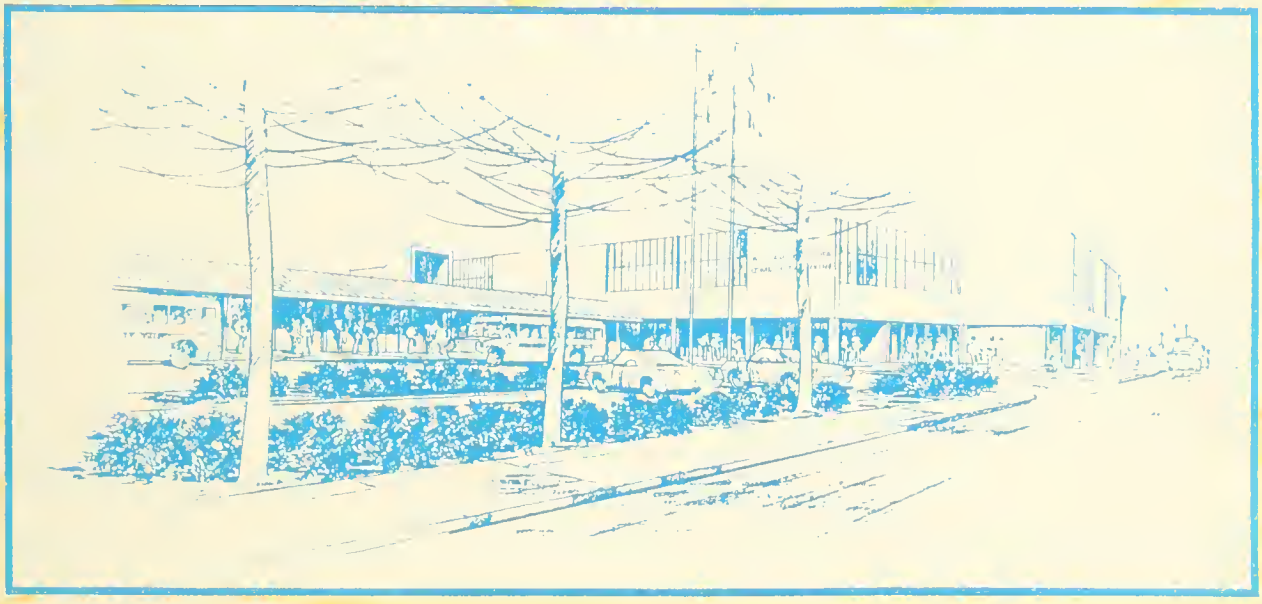
# The Williamsport Area Community College

## Catalog 80-81



*The Williamsport Area Community College*

*A Two-Year, Co-Educational,*

*Publicly Supported Institution*

*Serving North Central Pennsylvania,*

*Fully Accredited Member of*

*Middle States Association of Colleges*

*and Secondary Schools*

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The provisions of this catalog are not to be considered an irrevocable contract between the student and the College. The Williamsport Area Community College reserves the right to change any fees, requirements and regulations at any time within the student's term of enrollment at the College.

Students are responsible for meeting in full the requirements for graduation set forth by the College. The student advisor assists in the planning of a program, but the final responsibility for meeting the requirements for graduation rests with the student.

The Williamsport Area Community College does not discriminate on the basis of age, sex, handicap, race, religion, creed, or national origin. Student inquiries concerning Title IX compliance should be directed to the Dean for Student and Career Development in Room 201 of the Klump Academic Center, The Williamsport Area Community College, 1005 West Third Street, Williamsport, PA 17701, (717) 326-3761, ext. 243, or to the Director of the Office of Civil Rights, Department of Health, Education and Welfare, Washington, D.C. 20201.

http://www.archive.org/details/williamsportarea8081unse

# The Williamsport Area Community College

1005 West Third Street
Williamsport, Pennsylvania 17701
(717) 326-3761

## Catalog '80-81

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# About The College

## Philosophical Platform

We believe in people – in their dignity, in their worth as individuals, and in their capacity to develop their abilities to the fullest potential. We believe that people who perform competently and who find meaning in their work will be healthier and happier people, and the organizations in which they work and the communities in which they live will benefit. We believe in an integrated approach to learning where education and the world of work function in a cooperative atmosphere. We believe that by assisting the individual in discovering, preparing for, developing and maintaining a career, we are also developing the community.

## Mission

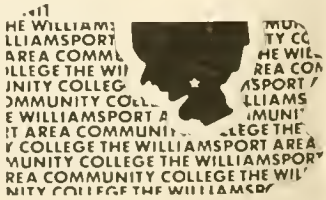
It is the mission of The Williamsport Area Community College to provide performance-oriented educational services responsive to the current and future needs and interests of individuals and organizations in our service area. We are dedicated to working with other agencies in developing the full potential of individuals and communities in our area. We are deeply committed to providing quality and accessible career education on both the high school and college level, as well as lifelong learning opportunities. Within the resources available to us, we will attempt to carry out our mission as efficiently as possible. Above all, we care about people and will attempt to fulfill our mission within the context of a humanistic educational environment.

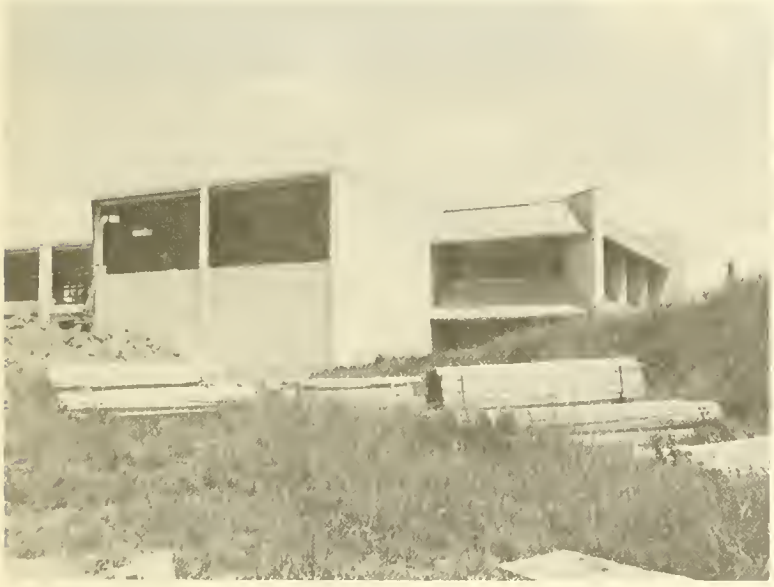
## History

1914 – A small industrial arts shop opened at the Williamsport High School.
1920 – A full-time adult day school and an evening school were established.
1941 – The Williamsport Technical Institute was formed, encompassing both the adult and high school programs.
1965 – The Williamsport Area Community College was established by expanding the programming of the Williamsport Technical Institute to include a larger range of community needs.

## Today

The Williamsport Area Community College serves the residents of north central Pennsylvania with 50 degree and certificate programs for college students, 18 vocational programs for high school students from 12 school districts, non-credit Community and Continuing Education courses throughout the sponsor area, and specially designed programs for business, industry, and other professional organizations. The College is presently involved in a building program designed to allow us to continue and improve our services to area residents.





## SPONSOR SCHOOL DISTRICTS

**Bradford County**
- Canton Area
- Troy Area

**Clinton County**
- Keystone Central

**Columbia County**
- Millville

**Lycoming County**
- East Lycoming
- Jersey Shore Area
- Montgomery Area
- Montoursville Area
- South Williamsport Area
- Williamsport Area

**Northumberland County**
- Line Mountain
- Warrior Run

**Potter County**
- Northern Potter

**Snyder County**
- Selinsgrove
- Midd-West

**Sullivan County**
- Sullivan County District

**Tioga County**
- Northern Tioga Area
- Southern Tioga Area
- Wellsboro Area

**Union County**
- Mifflinburg Area

Penn College
W.U. W.A.C.C.
1941 - 1965 - 1969

# CAMPUS MAP

**1** **Secondary Automotive Building**

**2&** **Electrical Building**

**3** Electrical Technology/
Electrical Construction
Welding

**4** **Machine Shop Building**
Machine Tool Technology
Machinist - General
Plumbing

**5** **William Stitzel Building**
Diesel Mechanics

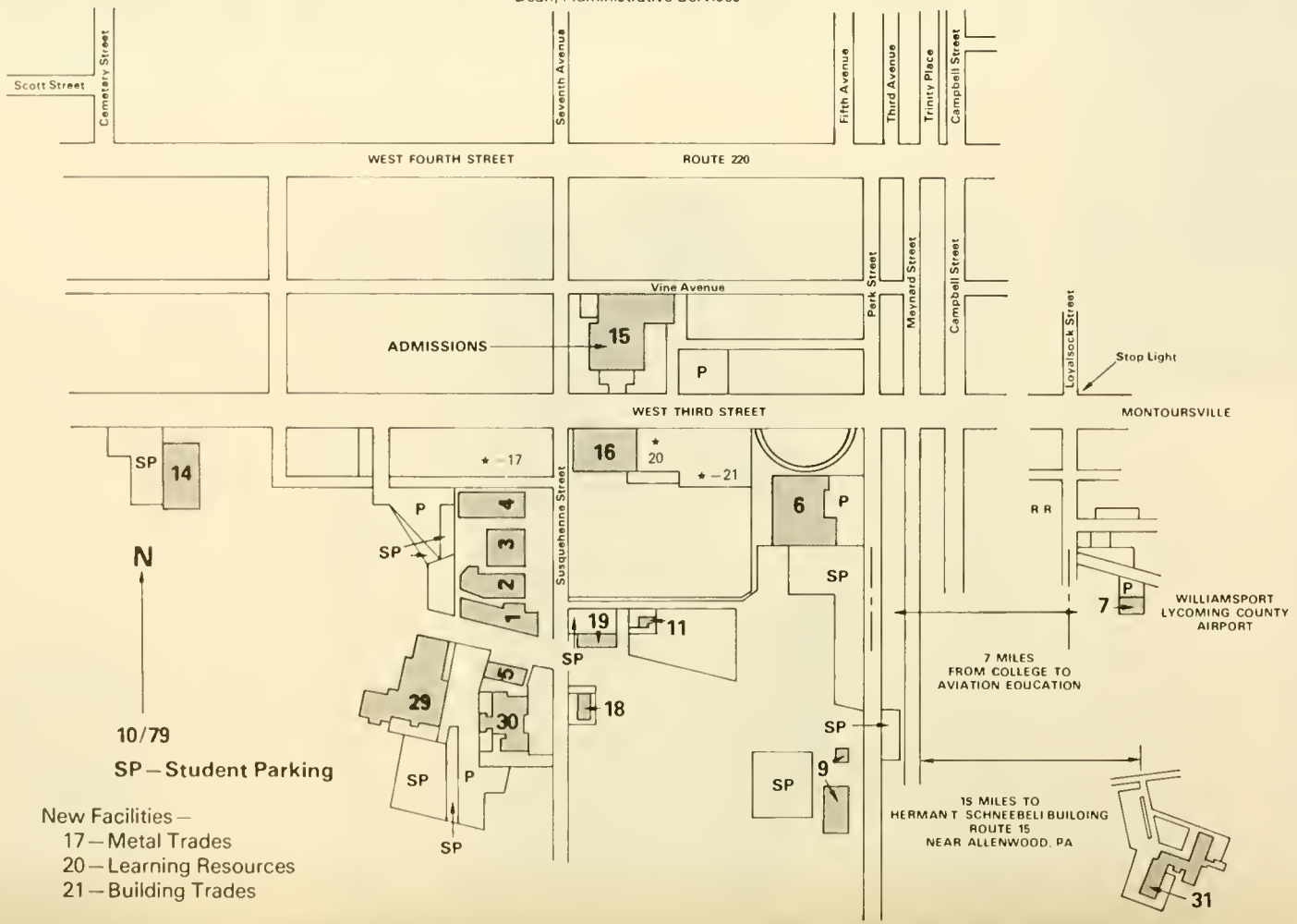
**6**
Architectural Technology
Broadcasting
Electronics Technology
Engineering Drafting Tech.
Graphic Arts
Mechanical Drafting
Printing
Technical Illustration
Science Laboratories
President's Office
Community Relations
Institutional Research
Internal Communications
Resource Development Office
Dean, Administrative Services
Business & Financial Operations
Personnel Office
Duplicating & Mail Services
YETP

**7** **WACC Hangar at Airport**
Aviation Technician

**9** **Crooks Maintenance Bldg.**

**11** **Student Government House**
SGA Offices

**14** **Rishel Building**
Developmental Studies & ACT 101
Reading Laboratory
Sign Painting
Learning Resources Center




**15** **Klump Academic Center**
Accounting
Advertising Art
Business Management
Clerical Studies
Communications, Humanities, Social Science
Computer Science
Dental Hygiene
Dietetic Technician
English
Food & Hospitality Management
Journalism
Marketing/Merchandising
Mathematics
Mathematics/English Laboratory
Operating Room Technician
Practical Nursing
Secretarial Science
Technical Illustration
ACES Office
Admissions
Alumni Office
Dean, Community & Continuing Education
Dean, Student & Career Development
Bursar
Cafeteria
Career Development Center
Computer Center
Counseling
Dean, Degree & Certificate Programs
Financial Aid
Notary Public
Placement
Postsecondary Cooperative Education
Student Records
Security (Parking, Lost & Found)
Spotlight
Student Activities
Student Ombudsman
Tot Watch
Veteran's Information

**16** **Lewis Bardo Gym**
Physical Education & Health

**18** **Media Center**

**19** **Lair**
Dispensary
Student-Faculty Center

**29** **Cromar Building**
Carpentry
Carpentry & Building
Construction Technology
Civil Engineering Technology
Plumbing
Bookstore
Dean, Secondary Vocational Programs

**30** **George Parkes Building**
Auto Body Repair
Automotive Mechanics
Automotive Technology

**31** **Herman Schneebeli Building**
Agribusiness
Floriculture
Forest Technology
Heavy Construction Equipment
Service & Operation
Nursery Management

*Admission—3*
*Tuition & Fees—8*
*Financial Aid—10*

## ADMISSION

### Admission Policy

The Williamsport Area Community College is committed to serving all who may benefit from the programs offered. The College operates under an "open-door" admissions policy and is open to any person who has a high school diploma or its equivalent. Individuals age 18 or older who do not have a high school diploma or the equivalent may be admitted as "special students."

Admission into several programs of study is based upon the applicant's meeting the requirements (including necessary academic skills and prerequisites) of the specific program of study. The College reserves the right to deny admission or readmission to any student if, in the opinion of College authorities, his/her admission is not in the best interest of the student or the College.

The Williamsport Area Community College offers equal opportunity for admission to anyone regardless of age, race, color, creed, sex, national origin, or handicap.

The College will provide an opportunity to develop the basic skills necessary to enroll in associate degree and certificate courses to those who demonstrate such need through the College's Testing and Placement program.

## Acceptance and Admission Preference

The Williamsport Area Community College will grant acceptance based on the date the applicant's file (i.e., application for admission, application fee, transcripts/GED, and, when appropriate, testing material) is completed in the Admissions Office, with the exception that sponsor district applicants whose files are complete by the dates below will have preference for admission.

The College will give preference for admission to the College to residents of sponsoring school districts. The College will grant preference for admission to residents of sponsor districts until February 1 for the fall semester and until October 1 for the spring semester.

## Admission Procedure

All graduates of accredited secondary schools in the Commonwealth of Pennsylvania are eligible for admission to the College as regular students. Admission into a specific curriculum is based upon evidence of scholastic readiness for the curriculum.

1. Application and Application Fee

   All applicants for degree and certificate programs must submit an application for admission together with a non-refundable application fee. This fee is charged only once. The Director of Admissions, upon written request from a high school counselor or State agency, has the authority to waive the fee when it can be determined that the fee causes financial hardship to an individual.

2. High School Graduation

   a. High school students must submit a partial transcript during their senior year. However, a final transcript of high school credits or proof of graduation from an approved or accredited high school with a four-year course of study must be on file before a student can attend classes.

   b. High school graduates must submit a final transcript of high school credits or proof of graduation from an approved or accredited high school with a four-year course of study.

   c. Applicants age 18 or older may be admitted to the College on the basis of an equivalency diploma, provided that the diploma is issued upon a minimum average General Equivalency Diploma (GED) test score of 45. Under special circumstances, applicants 17 years of age may be considered for admission with a minimum average GED test score of 45.

   d. Anyone age 18 or older who has not met the requirements of sections a., b., or c. above may be considered for admission into a program as a "special student" provided he/she has the appropriate aptitudes and abilities to enter the College.

   e. Early Admission: a student of exceptional ability who has completed the eleventh grade in an accredited high school may be enrolled as a full-time or part-time student at WACC in either a degree or certificate program during what would normally be the senior year of high school. To qualify for such early admission, the chief administrative officer of the high school must approve and submit the application, together with an official high school transcript, to the Admissions Office for determination of eligibility for the specific degree or certificate program desired. Upon satisfactory completion of the first year in a full-time college program, an early admission student can qualify for a regular high school diploma.

3. Placement Examinations

   To insure that applicants have the entry level skills needed for their programs, all full-time accepted students are required to take the College's placement examinations. The College uses these examinations to assess applicants' skills in math, English and reading. Based on the results of their tests, students will be placed in the appropriate math, English, and reading courses. The College reserves the right to recommend another program or require developmental courses if the test results indicate that an applicant does not have the required academic entry skills.

4. Health Records Requirement

   Each student is required, as a condition of admission, to complete and submit his/her medical history on a health record card provided by the Admissions Office. The health card should be submitted well in advance of the intended term of entry in order to accommodate any special need and must be received before the student can begin classes.

5. Tuition Deposit

   All full-time applicants who have been accepted as degree-seeking or certificate-seeking students must submit a non-refundable $50 tuition deposit. The tuition deposit will be credited to an individual's first semester tuition. If an individual does not enroll, the tuition deposit is non-refundable and cannot be credited toward another semester.

The tuition deposit will hold a space in class until 10 days prior to late registration. Students who have not fulfilled their total financial obligations for the semester 10 days prior to late registration will forfeit their class space. This may result in someone from the College's waiting list taking their space in the program.

6. Additional Requirements

In addition to the College's general admission policies and requirements, applicants to the Aviation Maintenance Technician, Dental Hygiene, Operating Room Technology, Practical Nursing, and Radiological Technology programs must also meet the following requirements:

a. All applicants must have graduated from an accredited secondary school or have successfully completed the General Education Development Examination (GED).

b. All applicants must successfully complete the College's Placement Tests. All deficiencies, when identified through testing, must be remediated before acceptance into the program.

c. All qualified applicants will be required to discuss their career choice and expectations of the program during an interview. Aviation applicants are exempt from this requirement.

d. All Dental Hygiene and Practical Nursing applicants must take additional standardized tests. The results will be used in the final review of the applicant's file to determine acceptance.

## Admission of International Students

The Williamsport Area Community College believes that the presence of a balanced representation of international students on campus will enrich the educational environment for all students. The College is authorized under Federal law to enroll non-immigrant alien students on "F-I" student visas. Application and all supporting documents must be received in the Admissions Office at least two weeks prior to the day of late registration for the term of entry.

All transcripts, test scores, and other credentials become the property of the College and will not be returned or transferred to another institution.

In addition to the College's general admission requirements, international students must fulfill the following requirements:

1. All international students whose native language is not English are required to take the Test of English as a Foreign Language (TOEFL).

2. Applicants must submit an affidavit of support for themselves and for all members of their family who will accompany them to Williamsport. This requires that applicants certify that they have adequate funds to attend college and will not become a public charge. Failure to provide this information may result in the denial of the applicant's application for an "F-I" student visa.

3. All international students who are accepted must take the College's placement tests. Placement into the appropriate level of courses will be determined by the tests. International students must arrange to be on campus approximately one week prior to registration for the proposed term of entry. Failure to complete placement tests may result in denial of acceptance into programs.

4. International students must become familiar with the regulations of the Immigration and Naturalization Service and assume responsibility for complying with test regulations.

## Re-Enrollment

Former WACC students who wish to be readmitted must request a re-enrollment application from the Admissions Office. This application must be completed before any admission status can be granted. Students applying for readmission do not have to submit an application fee. They do, however, have to submit a health records card.

1. Re-enrollment in the Same Program

   When a former WACC student re-enrolls in the same program in which he/she was last enrolled, each course previously completed will be evaluated to determine whether it meets the requirements of the program in which the student is re-enrolling. All courses will appear on the student's transcript and the previous cumulative average will be retained. (Courses no longer appropriate for the program will appear on the transcript and will be included in the cumulative average.) Re-enrolled students are required to meet the graduation requirements in effect at the time they re-enroll, unless the student re-enrolls less than two years after he/she has last attended. Students re-enrolling in the same program less than two years after they last attended may meet graduation requirements in effect at the time they originally enrolled.

2. Re-enrollment in a New Program

   When a student returns to WACC and re-enrolls in a different program from the one in which he/she was last enrolled, each course previously taken will be evaluated to determine whether it meets the requirements of the new program. Only credits earned in the prior program which are appropriate for the new program will be used in recalculating the new cumulative average. Students re-enrolling in a new program are required to meet the graduation requirements in effect at the time they re-enroll.

   Exception: Students re-enrolling less than two years after they last attended must meet any requirements such as required Developmental courses which were stipulated at the time they originally enrolled.

## Transfer Students

Students who wish to transfer to the The Williamsport Area Community College must follow the procedure below:

1. Complete steps listed under Admission Procedure, with the exception of "High School Graduation."

2. Ask all college(s) previously attended to send an official transcript to The Williamsport Area Community College Admissions Office. WACC may also request a high school transcript.

## Transfer Credit

Transfer credit includes credit for courses earned at another institution, college credit earned before high school graduation, service credit, United States Armed Forces Institute (USAFI) credit, and credit earned through the College Level Examination Program (CLEP).

A maximum of 30 transfer credits may be applied toward a degree or certificate. Courses to be considered for transfer must have been completed with a grade of "C" or better. However, if a student earns a cumulative "C" average or better in sequential courses, an exception may be made based on the evaluation of the courses. A copy of the evaluation of transfer credit will be sent to the student. All transfer credit will appear on the student's transcript after the student successfully completes one semester of academic work on WACC's campus. Transfer credit will appear on the transcript with credit value only. Transfer students will enroll without any cumulative grade point average. Transfer students must complete their last semester at WACC unless this requirement is waived by the Dean for Degree and Certificate Programs. Requirements for the evaluation of different forms of transfer credit are listed below.

1. Transfer from Another Institution

   All credits earned at a previously attended institution(s) will be evaluated for transfer credit. The student must send WACC's Admissions Office an official catalog description of each course to be evaluated and a description of the grading codes (if the grade codes are not defined on the transcript) from each institution from which courses are to be evaluated. These materials must consist of either of the following: the institution's catalog or a photocopy of the course descriptions and the grade codes description taken from the institution's catalog.

2. College Credit Earned Before High School Graduation

College credit earned before high school graduation will be evaluated only if the college where the work was taken issues an official college transcript. Students who have earned college credit before graduation from high school must follow the procedure defined under "Transfer from Another Institution."

3. Service Credit

Veterans who have served 12 consecutive months of active military duty will be granted credit for health and/or physical education (if required in their program). The student must submit a copy of his/her report of separation (DD-214) and complete a waiver for physical education with the Physical Education Office.

4. United States Armed Forces Institute Credit (USAFI)

WACC may grant credit for USAFI credit. An official transcript must be mailed directly from USAFI in Madison Wisconsin to WACC's Admissions Office. Credit will be granted for those courses which are substantially comparable to courses offered at WACC. If the student's program at WACC includes electives, elective credit will be granted for those courses which are not comparable.

5. College Level Examination Program (CLEP)

The College will examine CLEP results and may grant college credit to individuals who score at least in the 50th percentile rank on the CLEP exam. The student must provide an official copy of his/her CLEP scores to WACC's Admissions Office. The College will determine whether credit earned through CLEP will be issued for required credit courses or as elective credit.

## Non-Degree Students

A student who does not wish to pursue a degree or certificate program is not required to make a formal application for admission or to file credentials. If, at a later date, a non-degree student desires to enroll in a degree or certificate program, an application for admission, together with other required credentials, must be submitted to the Admissions Office.

## Housing

Students are responsible for making their own housing arrangements. The Housing Coordinator, located in the Admissions Office, Klump Rm. 104, maintains a list of available housing facilities for men and women. Prospective students are urged to make arrangements for housing as soon as possible after being admitted. A booklet containing guidelines on obtaining housing is available from the Housing Coordinator, Klump Academic Center, Rm. 104. The College does not sponsor, approve, disapprove, evaluate or supervise the listed facilities. An agreement for renting is solely between the landlord and student.

## Health Services

A dispensary, staffed by a registered nurse, is open Monday through Friday from 8 a.m. to 3:30 p.m. First aid, health counseling, and assistance in obtaining private health care is available. Costs for private health care are the student's responsibility.

## Student Accident Insurance—1980-1981

The College presently provides student accident insurance for all full-time students. Students are covered while in class, going to and from class, and during participation in all College-related activities. All full-time students have the option to extend this coverage, at their own expense, to 24-hour coverage. They may also purchase sickness insurance under the same policy. Part-time students have the option of purchasing low cost accident insurance for a minimal amount.

## Facilities

For information regarding College facilities, including access for the handicapped, contact the Admissions Office, Klump Academic Center, Room 104.

## Student Retention Data

Persons interested in obtaining data on student retention (number of students who enroll at the College and number who actually complete their program) should contact the Director of Student Records, Klump Academic Center, Room 110.

## TUITION AND FEES

### Full-Time Students

A full-time student is defined as anyone enrolled in twelve or more credit-hours per semester.

### Application Fee

Applicants for status as full-time students in degree or certificate programs must include a non-refundable $15 Application Fee with their application. You are required to pay this non-refundable fee only once.

### Tuition Deposit

All applicants who have been accepted as full-time degree or certificate students must make a $50 non-refundable Tuition Deposit to hold a class reservation in the first semester for which they have applied.

If you enroll at the designated time, the deposit will be credited to your first semester's tuition. If you do not enroll at the designated time, the deposit is non-refundable and can not be carried forward to another semester.

### Tuition and Related Fees—1980-81**—Per Semester

Tuition and related fees are governed by your area of residence. The four categories of residence and the tuition and fees for each are:

1. **WACC Sponsoring School District**

   If you reside in a school district which sponsors The Williamsport Area Community College, you must have the secretary of your local school board complete a Certificate of Sponsorship to be eligible for Sponsoring School District tuition rates. The form should be mailed to the Bursar's Office after you have been accepted and as soon as possible prior to registration. (Sponsor School Districts are listed in the front of this Catalog).

| | FULL-TIME | PART-TIME* |
|---|---|---|
| Tuition | $425.00 | $35.50 |
| Service Fee | none | none |
| Activity Fee | $ 15.00 | none |
| TOTAL | $440.00 | $35.50* |

**Tuition and Fees are subject to change without notice.

2. **Pennsylvania School District Sponsoring Another Community College**

   If you reside in a school district which sponsors another Pennsylvania Community College, you must obtain permission, IN WRITING, from the Board of Trustees of that particular institution to qualify for Sponsoring School District tuition and fees. If you do not obtain permission, you will be charged the same tuition and fees as Non-Sponsor students.

| | FULL-TIME | PART-TIME* |
|---|---|---|
| Tuition | $425.00 | $35.50 |
| Service Fee | $115.00 | $ 9.50 |
| Activity Fee | $ 15.00 | none |
| TOTAL | $555.00 | $45.00* |

3. **Non-Sponsoring Pennsylvania School District**

   If you reside in a Pennsylvania school district which does not sponsor a Pennsylvania Community College, you will pay the following tuition and fees:

| | FULL-TIME | PART-TIME* |
|---|---|---|
| Tuition | $810.00 | $67.50 |
| Service Fee | $115.00 | $ 9.50 |
| Activity Fee | $ 15.00 | none |
| TOTAL | $940.00 | $77.00* |

4. **Out-of-State Resident**

   Out-of-State students will pay the following tuition and fees:

| | FULL-TIME | PART-TIME* |
|---|---|---|
| Tuition | $1110.00 | $ 92.75 |
| Service Fee | $ 230.00 | $ 19.00 |
| Activity Fee | $ 15.00 | none |
| TOTAL | $1355.00 | $111.75* |

*Per semester hour of credit or equivalent.

## Fees for Students Enrolling for Overload Credits

With the exception of prescribed overloads for Practical Nursing and Aviation Maintenance Technician programs as described in the College catalog, a degree or certificate student enrolled for more than 18 credits will be charged the current student tuition rate per credit for each credit over 18.

## Deferred Payment

The College shall not knowingly accept a partial payment from any student except as required for tuition deposits, financial aid plans, or within the guidelines established by the Board of Trustees' policy for deferred fee status.

Any student whose fee is in arrears after the first day of classes shall be subject to a $20 deferred processing fee.

Students who are unable to pay tuition and fees in full by the due date, may elect to pay a partial payment as determined by the College and pay the remaining portion in two equal installments at 30-day intervals following the beginning of the semester. A $20 processing fee will be charged for these services. Nullification or adjustment of financial aid awards shall not alter the student's obligation to complete installment payments to the College.

Students who fail to meet their financial obligations under this plan shall be administratively withdrawn. Such termination will not cancel the student's financial obligation to the College. Students participating in an installment plan will have their grades and transcripts held until their accounts are settled.

## Books and Supplies

Expenses for books and supplies will vary considerably from program to program. College policy strives to keep your expenses as low as possible by operating the College Bookstore on a low-cost basis. For full-time students the cost can be as high as $120 per semester.

## Tools

When you have been accepted for a particular program, the Admissions Office will provide you with an appropriate list of tools which will be used during your course of study. It is recommended that you do not buy any tools or protective clothing for any course before you attend the first class session. Tool costs vary greatly, depending on your program. Prospective students should contact the Admissions Office for a list of estimated costs for each program. It should be emphasized that these tools will be your personal property, an investment you will use with pride throughout your career.

## Transcripts

The student's grade report is an unofficial transcript which shows all course work completed by the student. Students may use their grade report when an unofficial transcript is needed.

Students will be charged $1.00 for each additional transcript. All requests for additional transcripts must be submitted in writing. The request must contain the following information: the student's name while attending WACC, the student's address and social security number, the dates of enrollment, the name of the program(s) in which the student was enrolled, and a complete address to which the transcript is to be sent. If the transcript is sent to the student or to his/her address, it is considered an unofficial copy. Official transcripts are only those transcripts sent to another institution, agency, or employer.

## Graduation Fees

Any students who wish to receive an engraved diploma or certificate when they graduate must pay a $5.00 fee when they petition to graduate. If a student orders a diploma or certificate after the date of graduation, the student must pay a special processing fee of $10.00.

If a graduating student does not wish to receive an engraved certificate or diploma, he/she will not be charged the graduation fee.

## Veterans Information

The College has been approved for the education and training of veterans. The Student Records Office provides counseling and assistance to veterans. All veterans must register with the Student Records Office in order to collect G.I. benefits or to initiate action concerning the Veterans' Administration. Veterans should bring a copy of their DD 214 and, when applicable, their marriage certificate and children's birth certificates, to the Student Records Office at their first interview. The Student Records Office maintains a complete supply of forms for such purposes.

The College does not handle advance payment requests.

## Withdrawals and Refunds

Charges for tuition are refundable upon official withdrawal from the College as explained in the Academic Information section. Application fees, service fees, activity fees, and tuition deposits are not refundable. A "Request for Refund" form can be obtained from the Bursar's Office. In order to obtain a refund the "Request for Refund" form and the necessary withdrawal forms must be submitted at the same time. (See page 120 for withdrawal procedures.)

Refunds of tuition will be made according to the following schedule for fall and spring semesters:

| | |
|---|---|
| Prior to the first day of Classes | 100% Refund |
| First Week of Classes | 80% Refund |
| Second Week of Classes | 70% Refund |
| Third Week of Classes | 60% Refund |
| After Third Week of Classes | No Refund |

Refunds will be made according to the following schedule for the summer semesters:

| | |
|---|---|
| Prior to the first day of Classes | 100% Refund |
| 7% of total instructional hours | 80% Refund |
| 13% of total instructional hours | 70% Refund |
| 20% of total instructional hours | 60% Refund |
| After 20% of total instructional hours | No Refund |

# FINANCIAL AID

Recognizing that the cost of education is often greater than the student and his/her family can afford without help, the Financial Aid Office operates to help students obtain financial assistance through a variety of aid programs:

Grants
Scholarships
Loans
College Work-Study Program
Veteran's Benefits
Social Security Benefits
Vocational Rehabilitation Sponsorship
Part-Time Employment

Every student is encouraged to thoroughly explore each of the above programs, and to contact the Financial Aid Office for assistance in obtaining and completing applications for aid.

## Employment

Students interested in part-time employment other than the College Work-Study program should contact the College Placement Office for further information.

## Special Attention

### Deadlines

Students who want the fullest consideration for all awards, should have all needed application materials complete and on file in the Financial Aid Office as soon as possible. For the 1981-82 year, for example, completed applications for some forms of aid should be on file by March 1, 1981. Applications received after this date will be processed and students filing late will be considered for aid, but only after other applications received by the deadline have been reviewed and awards made.

An exception to the above deadline is made for the Guaranteed Student Loan Program. Loan applications may be submitted at any time during the year, but should be filed early enough to allow for the 6 to 8 week processing time prior to loan approval and release of funds to the applicant.

### Need Analysis Forms

To determine a student's financial eligibility for awards, especially Supplemental Grants and College Work-Study awards, a review of the family financial situation must be completed.

At WACC, the Pennsylvania Higher Education Assistance Agency system is used for need analysis purposes. These forms can be obtained from WACC's Financial Aid Office, high schools and the state agency.

## Good Standing and Academic Progress for Students Receiving Financial Aid

**Good Standing**: For all federal student assistance programs, a student shall be in "good standing" so long as he/she is eligible for continued attendance at the College.

**Academic Progress**: The following policy shall apply to all students receiving financial aid from federal or state student assistance programs:

1. BEOG/SEOG/CWS (Federal Programs)

A student shall be considered to be making "satisfactory progress": if he/she successfully completes twenty-four credits for each academic year he/she enrolls as a full-time student and receives aid from BEOG, SEOG, CWS or NDSL Programs, provided, however, that no student will receive more than five semesters of awards if enrolled in a two-year program, or three semesters of awards if enrolled in a one-year program. Full-time students who complete less than twenty-four credits per academic year for which aid is received, may appeal the determination of ineligibility by writing to the Director of Financial Aid or her designee, stating the basis for appeal.

Exceptions will be made based on extenuating circumstances including, but not limited to, documented illness requiring withdrawal, or change of program with evidence of probable success. The Director or designee will inform the student in writing of the decision and the duration of time or conditions under which such exception may be made. The student may request a review of his/her circumstances and the Director's decision in a meeting of the student, the Dean for Student and Career Development and the Director of Financial Aid.

Any part-time student who receives aid and who fails, withdraws from, or receives an incomplete in two or more courses in which he/she was enrolled during an academic year of enrollment (or the equivalent), shall be ineligible for further aid until he/she completes courses equivalent in credits or hours to the number which he/she did not successfully complete.

Federal regulations further provide that if the institution determines at the beginning of a payment period that the student is not making satisfactory progress but is able to reverse that determination before the end of the payment period, the student may receive payments for the entire period. However, if the reversal of the original determination does not occur until after the end of the payment period, no retroactive payments may be made for that payment period.

2. PHEAA

PHEAA regulations provide that for each year of a PHEAA Grant, a student must successfully complete twenty-four credits for each year of PHEAA Grant. Appeals may be made directly to PHEAA. This policy is subject to revision by PHEAA.

3. GSL

PHEAA/Federal regulations require that we must certify academic level in the student's program. A student will be considered first level if he/she has not yet completed twenty-four credits toward the degree or certificate. Program regulations currently limit the amount of loan to $2500 per academic level. Appeals may be made to PHEAA directly.

NOTE:

| | | |
|---|---|---|
| BEOG | = | Basic Educational Opportunity Grant |
| SEOG | = | Supplemental Educational Opportunity Grant |
| CWS | = | College Work-Study Program |
| PHEAA | = | Pennsylvania Higher Education Assistance Agency |
| NDSL | = | National Defense Student Loan |
| GSL | = | Guaranteed Student Loan |

## Further Information and Assistance with Applications

Further information about all of the financial aid programs listed above can be obtained from the Financial Aid Office at the address below. The College's Financial Aid Brochure, which provides more information about all of these programs, should be obtained at this address and used as a guide in applying for aid. For information and applications, call, write, or visit:

*Financial Aid Office*
*The Williamsport Area Community College*
*1005 West Third Street*
*Williamsport, Pennsylvania 17701*
*(717) 326-3761, Ext. 241*

*Associate Degrees—13*
*Certificates—14*
*Divisions & Programs—15*
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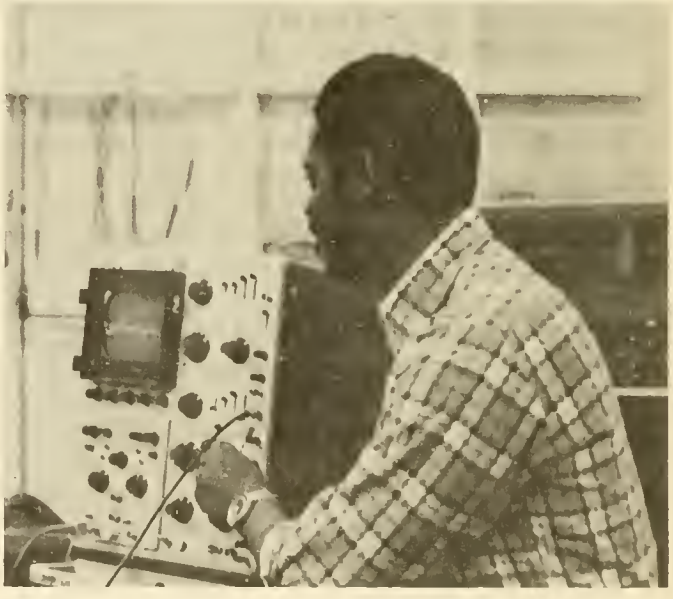


## ASSOCIATE DEGREES

You can earn one of three Associate degrees at The Williamsport Area Community College. All of them can be used to help you gain immediate employment or to serve as the base from which you can pursue further studies. Flexibility in each degree program gives you maximum freedom in meeting your individual needs.

The Associate of Applied Arts (AAA) is offered in Broadcasting, Journalism, and Advertising Art. These programs offer students the opportunity of gaining technical and professional skills and/or securing the background to transfer to a four-year college.

The Associate of Applied Science (AAS) degree program emphasizes technical career skills. These programs may be transferred to a four-year program of study (many four-year colleges are accepting AAS degrees in full or partial transfer credit toward a bachelor's degree.)

The Associate of Arts (AA) is a program primarily designed to parallel the first two years of a liberal arts education at a four-year college. Credits earned can usually be transferred toward the first two years of a bachelor's degree.

### Associate of Applied Arts

If you want to gain knowledge, proficiency, and skills in a particular vocational or career area, you can earn an Associate of Applied Arts degree. Each particular program has prescribed courses that you must complete in order to graduate.

The College offers Associate of Applied Arts (AAA) degrees in the following areas:

**Communications, Humanities, and Social Sciences**
- Broadcasting
- Journalism

**Engineering and Design Technologies**
- Advertising Art

### Associate of Applied Science

If you want to gain knowledge, proficiency, and skills in a particular technical, career, or vocational area, you can earn an Associate of Applied Science degree. Each particular program has prescribed courses that you must complete in order to graduate.

The College offers Associate of Applied Science (AAS) degrees in the following areas:

**Building Technologies**
- Carpentry & Building Construction Technology

**Business & Computer Science**
- Accounting
- Business Management
- Computer Science Technology
- Marketing/Merchandising
- Secretarial Science
  - Executive
  - Legal
  - Medical
- Technology Studies

**Earth Science**
- Agribusiness
- Floriculture—
  - Ornamental Horticulture Technology
- Forest Technology
- Nursery Management—
  - Ornamental Horticulture Technoiogy
- Wood Products Technology (Begins Fall 1981)

**Electric/Electronics**
- Electrical Technology
- Electronics Technology

**Engineering & Design Technologies**
- Architectural Technology
- Civil Engineering Technology
- Engineering Drafting Technology
- Graphic Arts
- Machine Tool Technology
- Technical Illustration
- Tool Design Technology

**Mathematics, Science, and Allied Health**
- Dental Hygiene
- Dietetic Technician
- Food & Hospitality Management
- Radiologic Technology
- **Special Programs**
  - Dental Laboratory Technician*

**Transportation Technologies**
- Automotive Technology

*Given at Lewisburg Penitentiary only

## Associate of Arts
**(College and University Transfer)**

**The General Studies and Individual Studies Program**

The Williamsport Area Community College offers an Associate of Arts (AA) degree in both a General Studies Program and an Individual Studies Program. Both programs are designed to provide the student with the opportunity to:

1. Participate in a planned educational program of studies leading to an Associate Degree.

2. Elect, from a broad spectrum of offerings, those courses most appropriate to individual academic and career goals.

3. Interact on a regular basis with the College staff and fellow students in the cultural, social, and recreational activities that provide for intellectual growth and emotional maturity.

4. Demonstrate a mastery of basic quantitative concepts and skills.

5. Display in written and oral presentations the ability to communicate clearly, correctly, and convincingly.

The General Studies Program is designed primarily to be transferable into four-year college degree programs and to provide the opportunity to begin academic course work leading to many professional careers. Specific curriculum guides have been developed for the following career areas:

Business Administration
Communications Emphasis
Education Emphasis
Math-Science Emphasis
Pre-Law Emphasis
Pre-Medical Emphasis
Pre-Theological Emphasis
Social Work Emphasis

The Individual Studies program provides maximum flexibility in designing an associate degree program to meet individual student needs. The Individual Studies program also offers students waiting for an opening in a particular career-oriented program the opportunity to begin work leading to a degree by taking appropriate available courses.

## CERTIFICATE IN SPECIAL FIELD OF STUDY

These programs are occupational in nature and are heavily skills oriented. They are not primarily designed for transfer but in certain cases can be transferred to some colleges. Certificate programs require the equivalent of two to four semesters of full-time course work in which you must maintain a 2.00 grade-point average.

A new feature of these Certificate in Special Field of Study programs is the Optional Elective. As the name implies, an Optional Elective can be chosen to broaden the basic academic work required of all college students. You are urged to make use of the opportunity to enrich your educational experience.

Certificates are offered in the following areas:

**Building Technologies**
Construction Carpentry
Plumbing and Heating

**Business and Computer Science**
Clerical Studies
Computer Operator

**Earth Science**
Service & Operation of Heavy Construction Equipment

**Electric/Electronics**
Electrical Construction
Office Machine Repair (not offered 80/81)

**Engineering & Design Technologies**
Machinist General
Mechanical Drafting
Printing
Sign Painting
Welding

**Mathematics, Science & Allied Health**
Operating Room Technician (Surgical Technology)
Practical Nursing

**Transportation Technologies**
Auto Body Repair
Automotive Mechanics
Aviation Maintenance Technician
Diesel Mechanics

## DIVISIONS AND PROGRAMS

### BUILDING TECHNOLOGIES
Division Director, George C. Krause

Carpentry & Building Construction Technology (CB)
Construction Carpentry (CC)
Plumbing and Heating (PL)

### BUSINESS & COMPUTER SCIENCE
Division Director, Dr. Donald B. Bergerstock

Accounting (BA)
Business Management (BM)
Clerical Studies (BT)
Computer Operator (CO)
Computer Science Technology (CS)
Marketing/Merchandising (MM)
Secretarial Science (BS):
- Executive
- Legal
- Medical

Technology Studies (TS)

**College & University Transfer Program**
- Business Administration

**Exam Preparation**
- Real Estate

### COMMUNICATIONS, HUMANITIES & SOCIAL SCIENCES
Division Director, Dr. Richard M. Sweeney

Broadcasting (BR)
Journalism (JO)

**Service Courses**
- Advertising
- Economics
- Education
- English
- German
- Government
- History
- Philosophy
- Psychology
- Sociology
- Spanish

### EARTH SCIENCE
Division Director, Joseph G. Sick

Agribusiness (AG)
Floriculture (FL) (Ornamental Horticulture Technology-OH)
Forest Technology (FR)
Nursery Management (NM) (Ornamental Horticulture Technology-OH)
Service & Operation of Heavy Construction Equipment (SO)
Wood Products Technology (WD) (begins Fall 1981)

### ELECTRIC/ELECTRONICS
Division Director, Donald O. Young, Sr.

Electrical Construction (EW)
Electrical Technology (EL)
Electronics Technology (ET)
Office Machine Repair (OR) (not offered 80-81)

### ENGINEERING & DESIGN TECHNOLOGIES
Division Director, Dr. Paul L. McQuay

Advertising Art (AR)
Architectural Technology (AT)
Civil Engineering Technology (CT)
Engineering Drafting Technology (ED)
Graphic Arts (GA)
Machine Tool Technology (TT)
Machinist General (MG)
Mechanical Drafting (MD)
Printing (GP)
Sign Painting (SP)
Technical Illustration (TI)
Tool Design Technology (TD)
Welding (WE)

**Exam Preparation**
- Engineer In Training

*New Building Trades Center and Learning Resources Center are scheduled for completion in winter 1981.*

**MATHEMATICS, SCIENCE & ALLIED HEALTH**
Division Director, Dr. Robert G. Bowers

Dental Hygiene (DH)
Dietetic Technician (DT)
Food & Hospitality Management (FH)
Operating Room Technician
(Surgical Technology) (OT)
Practical Nursing (NU)
Radiologic Technology (RT)
**Service Courses**
Biology
Chemistry
Environmental Science
Geography
Geology
Mathematics
Medical Terminology
Physics

Director, Physical Education, Thomas E. Vargo

Health & Physical Education

**TRANSPORTATION TECHNOLOGIES**
Division Director, Marlin M. Roush

Auto Body Repair (AB)
Automotive Mechanics (AM)
Automotive Technology (AU)
Aviation Maintenance Technician (AC)
Diesel Mechanics (DM)

**COLLEGE & UNIVERSITY TRANSFER PROGRAMS**
Dr. Robert G. Bowers
Dr. Richard M. Sweeney

**General Studies**
Communications Emphasis
Education Emphasis
Math-Science Emphasis
Pre-Law Emphasis
Pre-Medical Emphasis
Pre-Theological Emphasis
Social Work Emphasis

**Individual Studies**

**COMMUNITY & CONTINUING EDUCATION**
Dean, Dr. Russell C. Mauch

Non-Credit Courses & Programs
Business & Industrial Programs
Evening Courses

Director, Summer Sessions & Off-Campus Programs,
Thomas E. Vargo

Summer Sessions
Off-Campus Programs & Courses
**Special Programs***
Building Technology and Estimating (BE)
Dental Laboratory Technician (DL) (AAS Degree)
Food Service Management (FM)
Heating and Air Conditioning (HA)
Small Engine Repair (SE)

**COOPERATIVE EDUCATION (CED)**
Director, William C. Bradshaw

Courses in conjunction with Divisions and Programs

**DEVELOPMENTAL STUDIES (RDG)**
Director, R. Dean Foster

Courses

*Given at Lewisburg Penitentiary only

*New Metal Trades Center houses the Welding Program.*

## Accounting (BA)
## Associate Degree/Two Years

This program provides a broad business background with specialization in accounting. It begins on the elementary levels of accounting and business and advances to more complex levels.

**Types of Jobs:** Public, private, government, and corporate accounting, cost accounting, tax consultant, auditor, comptroller.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| ACC | 112 | Accounting I | 3 |
| MGT | 110 | Principles of Business | 3 |
| MGT | 111 | Business Mathematics | 3 |
| SEC | 111 | Typewriting I | 3 |
| ENL | 111 | English Composition I | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| ACC | 122 | Accounting II | 3 |
| ACC | 125 | Income Tax Accounting | 3 |
| CSC | 118 | Fundamentals of Computer Science | 3 |
| MGT | 124 | Office Procedures | 2 |
| ENL | 202 | Fundamentals of Speech | 3 |
| PED | | Physical Education | 1 |
| | | | 15 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| ACC | 231 | Cost Accounting | 3 |
| ACC | 232 | Intermediate Accounting I | 3 |
| MGT | 230 | Business Communications | 3 |
| MGT | 231 | Business Law I | 3 |
| | | Elective-Computer Science | 3 |
| | | Elective-Social Science | 3 |
| | | | 18 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| ACC | 244 | Intermediate Accounting II | 3 |
| ACC | 246 | Auditing | 3 |
| MGT | 241 | Business Law II | 3 |
| ECO | 201 | Principles of Economics | 3 |
| | | Elective | 3/4 |
| | | | 15/16 |

PROGRAM OBJECTIVES

The general objective of the Accounting program is to prepare the student for employment in the accounting field – public, private, and government. Alternatives may be to pursue advanced study or to add to the competencies of those currently employed in the field.

The graduate should be able to:

1. identify and apply generally accepted accounting principles.
2. organize, prepare, and interpret financial data and statements.
3. demonstrate skill in effective oral and written communication.
4. use and interpret federal and state income tax laws applicable to the individual and sole proprietor.
5. identify and apply generally accepted auditing standards.
6. identify the legal aspects affecting business.
7. apply computer knowledge and techniques in the preparation and analysis of financial statements and data.
8. apply human relations skills in the business environment.
9. apply general knowledge of the social sciences, and possess an awareness of their effect on our society.
10. identify the need for physical fitness and positive leisure activities.

## Advertising Art (AR)
## Associate Degree/Two Years

This program prepares students for employment in advertising art and related fields. The program provides skills in drawing, painting, designing, illustrating, coloring, paste-up, rendering, composing, layout, lettering, sketching, and proper use of tools, equipment, and materials. Related courses in journalism, photography, graphic arts, and courses in English, mathematics, and history are included to increase the student's career opportunities. Some art background is desirable.

**Types of Jobs:** Advertising artist, art director, layout artist, renderer, letterer, illustrator; mechanical work, general board work.
*GENERAL ELECTIVES are courses chosen from outside your program of concentration.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| ART | 111 | Basic Drawing | 3 |
| EDT | 101 | Mechanical Drawing | 2 |
| GCO | 515 | Layout and Design | 3 |
| JOU | 113 | Principles of News Photography | 3 |
| HIS | 111 | Western Civilization I | 3 |
| PED | | Physical Education | 1 |
| | | | 15 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| ART | 231 | Color and Design | 3 |
| GCO | 525 | Process Camera | 3 |
| ENL | 111 | English Composition I | 3 |
| MTH | 101 | Introduction to Mathematics I | 3 |
| PED | | Physical Education | 1 |
| | | Elective - Humanities/Social Sciences | 3 |
| | | | 16 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| ART | 121 | Basic Painting | 3 |
| ART | 232 | Lettering and Layout | 3 |
| GCO | 516 | Typographic Composition | 3 |
| ENL | 202 | Fundamentals of Speech | 3 |
| | | Elective | 3 |
| | | | 15 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| ART | 241 | Media and Techniques | 3 |
| ART | 242 | Advertising Design | 3 |
| ADV | 101 | Principles of Advertising | 3 |
| GCO | 526 | Film Assembly and Imposition | 3 |
| | | Elective | 3 |
| | | | 15 |

PROGRAM OBJECTIVES

The general objective of the program is to prepare the student for employment in the advertising art field or for transfer to a baccalaureate degree program.

A graduate of the Advertising Art program should be able to:

1. demonstrate the manipulative skills necessary to the advertising artist including dexterity with pen, brush and ink, litho pencil, carbon pencil, pastel, airbrush, art aids, and water base pigments.
2. demonstrate product rendering in the following mediums: watercolor, designers colors, retouch grays, wash, pen and ink, scratchboard, litho pencil, carbon pencil, airbrush, benday screens, and other art aids used in preparing mechanicals.
3. draw and sketch product and spot illustrations, the figure, and objects from nature.
4. demonstrate skills in color and design as applied to such variables as mass, color elements, shape, space, movement, time, and organization.
5. use lettering and layout skills, such as outline lettering, old style, modern and sans serif, free hand lettering, italic, brush, type indication and comp lettering.
6. lay out visual material for reproduction or presentation.
7. demonstrate desirable attitudes and work habits including creative thinking, the ability to solve problems, good artistic judgement, industry, cooperation, responsibility, self-reliance, and appreciation for and understanding of past civilizations.
8. demonstrate knowledge of the fundamentals of the trades with which the advertising artist deals, such as printing and publishing, oral and written communications, and advertising.
9. demonstrate an understanding of and respect for the employer-employee relationship, and an awareness of the necessity for delivering worthy service for value received.
10. demonstrate an awareness and appreciation of the interrelationship among production departments and the contributions each makes to the total product or service.
11. communicate clearly, both orally and in writing.
12. demonstrate knowledge of a lifetime sport which will provide recreation and promote physical fitness.
13. demonstrate an understanding of advertising art which is sufficient for entry-level employment and advancement in the field.

## Agribusiness (AG)
## Associate Degree/Two Years

The program in Agribusiness is designed to prepare men and women for mid-management positions in an agricultural business or to work in production agriculture as farm owners or supervisors.

**Types of Jobs:** Farm operator or manager; farm supply and garden center; feed, seed, and fertilizer sales; farm credit, financing, and insurance.
*GENERAL ELECTIVES are courses chosen from outside your program of concentration.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| AGB | 111 | Introduction to Agricultural Business | 4 |
| AGB | 112 | Soils, Fertilizer, and Agricultural Chemicals | 4 |
| MGT | 110 | Principles of Business | 3 |
| ENL | 111 | English Composition I | 3 |
| PED | | Physical Education | 1 |
| | | | 15 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| AGB | 123 | Field & Forage Crop Production | 3 |
| AGB | 124 | Agricultural Financing | 3 |
| AGB | 125 | Dairy Production | 3 |
| MGT | 111 | Business Mathematics | 3 |
| MGT | 230 | Business Communications | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| AGB | 236 | Animal Production | 4 |
| AGB | 237 | Special Topics in Agribusiness | 3 |
| ACC | 112 | Accounting I | 3 |
| ENL | 202 | Fundamentals of Speech | 3 |
| | | Elective-General* | 3 |
| | | | 16 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| AGB | 240 | Internship/Co-op | 3 |
| AGB | 248 | Farm Management | 3 |
| AGB | 249 | Agricultural Sales and Service | 3 |
| ECO | 201 | Principles of Economics | 3 |
| | | Elective-General* | 3 |
| | | | 15 |

PROGRAM OBJECTIVES

The general objective of the program is to prepare the student to obtain employment in agriculture-related businesses or to improve and add to the competencies of the person who will return to the home farm.

A graduate of Agribusiness should be able to:

1. write clear, concise, legible, and accurate technical reports using proper language structure.
2. identify oral communication skills, speak logically, and use various types of communication techniques to promote sales and service and to develop leadership.
3. interpret farm records and the principles of management and economics as they apply to the farm, including the principles of financing as applied to agribusiness and the ability to read and interpret computer print-outs.
4. analyze procedures involved in breeding, feeding, housing, and managing a dairy herd.
5. describe the physical and biological properties of soil, the use and general effects of fertilizer, and the proper use of chemicals in crop and livestock production.
6. identify various types of business organizations with regard to planning, organizing, financing, marketing, and other business principles.
7. describe the principles of breeding, feeding, marketing, and management of beef, swine, sheep, and poultry.
8. explain the marketing of agricultural products including the psychology of selling, pricing, and the importance of customer service.
9. demonstrate an attitude of responsibility toward agribusiness and the world of work.
10. utilize appropriate mathematical skills and competencies to solve applied problems in agribusiness.
11. demonstrate an appreciation of physical fitness and lifelong recreational activities.

## Architectural Technology (AT)
## Associate Degree/Two Years

This program provides instruction in architectural drafting principles and practices and in creating residential and commercial working drawings. It includes design fundamentals, structural calculations and site planning.

**Types of Jobs:** Architectural drafting, estimator, detailer, or specification writer in private practice, corporate departments, public bureaus, construction firms, landscape architecture firms, and engineering fields.
**Recommended High School Subjects:** Two years of algebra, one year of science.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| ARC | 111 | Statics | 3 |
| ARC | 112 | Architectural Graphics I | 4 |
| ARC | 113 | Introduction to Historic Theory in Architecture | 3 |
| ARC | 114 | Building Materials & Methods I | 3 |
| MTH | 103 | College Algebra | |
| | | or | 3/4 |
| MTH | 238 | Calculus I | |
| PED | | Physical Education | 1 |
| | | | 17/18 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| ARC | 121 | Structures I | 2 |
| ARC | 122 | Architectural Graphics II | 3 |
| ARC | 123 | Architectural Working Drawings | 2 |
| ARC | 124 | Design I | 4 |
| ENL | 111 | English Composition I | 3 |
| MTH | 104 | College Trigonometry | |
| | | or | 3/4 |
| MTH | 248 | Calculus II | |
| | | | 17/18 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| ARC | 231 | Structures II | 2 |
| ARC | 232 | Building Materials & Methods II | 3 |
| ARC | 233 | Building Equipment I | 3 |
| ARC | 234 | Site Planning | 3 |
| ARC | 235 | Design II | 4 |
| ENL | 121 | English Composition II | 3 |
| | | | 18 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| ARC | 241 | Structures III | 2 |
| ARC | 242 | Building Equipment II | 3 |
| ARC | 243 | Design III | 4 |
| ARC | 244 | Professional Administration & Contract Documents | 3 |
| ARC | 245 | Seminar | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

PROGRAM OBJECTIVES

The general objective of the Architectural Technology program is to provide students with the academic and practical educational experience which will prepare them for a variety of career options. Entry-level skills are developed to prepare the student for employment as an architectural technician. The program may also serve as a basis for higher education in such disciplines as architecture, architectural engineering, landscape architecture, urban design and planning, interior design and building construction

A graduate of the Architectural Technology program should be able to:

1. demonstrate understanding and appreciation of visual art.
2. demonstrate an attitude of responsibility toward the wise and efficient use of our natural resources.
3. illustrate mastery of architectural presentations including drawing, drafting, and model building.
4. demonstrate a sense of building structure, materials, and methods of construction.
5. perform first order structural calculations using wood, steel, and concrete.
6. demonstrate working knowledge of the environmental systems of structures including design competency.
7. explain professional practice and administration.
8. demonstrate basic knowledge of architectural design and planning.
9. apply working knowledge of site engineering and design.
10. demonstrate proficiency in architectural terminology and communications, including oral, written, and visual.
11. utilize appropriate mathematical competencies necessary for job performance and for the development of visualization skills and logical thought processes.
12. demonstrate knowledge of a lifetime sport which will provide recreation and promote physical fitness.

## Auto Body Repair (AB)
## Certificate/Two Years

The student masters trade tools and equipment through the study of theory and practical experience in sheet metal repairs, sanding, and application of fillers, primers, and color coatings. Shrinking, stretching, welding, panel installation, interior trim, and glass replacement are also stressed. The student gains skills in frame and steering alignment as well as damage estimating and repair.

**Types of Jobs:** Shop assignments to any of the areas mentioned: insurance companies, repair shops, dealerships, self-employment.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| ABC | 711 | Basic Auto Body (8 weeks) | 6 |
| ABC | 712 | Metal Work (8 weeks) | 6 |
| MTH | 710 | Technical Mathematics I | 3 |
| | | | 15 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| ABC | 721 | Reconditioning and Trim Work (8 weeks) | 6 |
| ABC | 722 | Panel Installation (8 weeks) | 6 |
| ENL | 711 | Communications | 3 |
| | | | 15 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| ABC | 831 | Metal Work and Filling (8 weeks) | 6 |
| ABC | 832 | Painting (8 weeks) | 6 |
| | | Optional Elective | 0/3 |
| | | | 12/15 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| ABC | 841 | Tools, Equipment and Estimating (8 weeks) | 6 |
| ABC | 842 | Painting and Estimating (8 weeks) | 6 |
| | | Optional Elective | 0/3 |
| | | | 12/15 |

PROGRAM OBJECTIVES

The general goal of this program is to prepare the student for a successful career in the field of auto body repair, collision appraisal and shop management.

A graduate of the Auto Body Repair program should be able to:

1. write clear, concise, legible, and accurate repair orders, estimates, technical reports, and business letters.
2. demonstrate skill in basic communication and the ability to speak logically; use types of oral communication techniques to promote sales and service and to develop leadership.
3. maintain service records and customer files.
4. identify the problems of an auto body repair shop, including personnel, equipment, and customer relations.
5. diagnose common paint problems and make necessary repairs.
6. make automotive collision repairs to sheet metal components.
7. make repairs to automotive glass, upholstering, trim and related components.
8. demonstrate both efficiency and quality in the field of automotive refinishing.
9. diagnose and repair common malfunctions related to mechanical parts, other than sheet metal, damaged by collision.
10. demonstrate an attitude of responsibility toward auto body repair and the world of work.
11. use elementary mathematical operations (addition, subtraction, multiplication, division) including decimals, fractions, and conversions as they apply to auto body repair.

## Automotive Mechanics (AM)
## Certificate/Two Years

Theory and manipulative skills, as practiced with modern tools and equipment, are stressed in a program which teaches the student to service and repair light commercial and passenger vehicles. Proficiency is gained in working with power train, steering, brakes, ignition, carburetion, engines, and electrical components and assemblies.

**Types of Jobs:** General auto mechanic in a dealership, independent garage, fleet operation, service station, self-employed.

FIRST SEMESTER

| | | Credits |
|---|---|---|
| AMC 713 | Power Train - Standard (8 wks.) | 6 |
| AMC 714 | Brakes and Suspension (8 wks.) | 6 |
| MTH 710 | Technical Mathematics I | 3 |
| | | 15 |

SECOND SEMESTER

| | | Credits |
|---|---|---|
| AMC 723 | Electric and Fuel (8 weeks) | 7 |
| AMC 724 | Basic Engines (8 weeks) | 6 |
| ENL 711 | Communications | 3 |
| | | 16 |

THIRD SEMESTER

| | | Credits |
|---|---|---|
| AMD 634 | State Inspection Repairs (8 weeks) | 6 |
| *Service Specialty Courses: student must complete one of the courses of which only two will be offered during a given semester. | | 6 |
| AMD 635 | Automatic Transmission (8 weeks)* | |
| AMD 636 | Air Conditioning (8 weeks)* | |
| AMD 637 | Engine Overhaul (8 weeks)* | |
| | Optional Elective | 0/3 |
| | | 12/15 |

FOURTH SEMESTER

| | | Credits |
|---|---|---|
| AMC 843 | Vehicle Performance Analysis | 12 |
| | Optional Elective | 0/3 |
| | | 12/15 |

PROGRAM OBJECTIVES

The goal of this program is to prepare the student for a successful career as an automotive mechanic in a dealership, independent garage, or a self-operated business. The program also provides the academic and practical educational experience which enables students to pass the Pennsylvania Vehicle Safety Inspection written exam for certification as a vehicle safety inspection mechanic.

A graduate of the Automotive Mechanics program should be able to:

1. diagnose and repair common malfunctions of systems and components on popular makes of automobiles.
2. diagnose and repair malfunctions and wear patterns in any two of the following specialized automotive service areas:
   a. engines
   b. automatic transmissions
   c. air conditioning
3. make tests, adjustments, and repairs to engine electrical, fuel, and emission control components.
4. interpret wiring diagrams, test and make repairs to starting, charging, lighting, and accessory systems of vehicles.
5. use elementary math operations (addition, subtraction, multiplication, division) including decimals, fractions, and conversions as they apply to automotive mechanics.
6. demonstrate the ability to write letters of application, resumes, memos, work orders, and reports; recognize current forms and styles of the above.
7. demonstrate an attitude of responsibility toward the automotive service and manufacturing industry and the world of work.

## Automotive Technology (AU)
## Associate Degree/Two Years

This program presents the advanced theory of operation of automotive systems and components. The theory of operating principles is applied to diagnose both real and hypothetical malfunctions. Service, repair and test procedures with modern equipment and special tools are emphasized. Service specialization and business management may be elected. (On completion of this program the student may transfer to a four-year institution).

**Types of Jobs:** Dealership service specialist, assistant service manager, skilled jobs in the automotive manufacturing industry, service equipment representative, rebuilding shop assembler, repair shop operator, parts department manager.
**Recommended High School Subjects:** One course in algebra for career students, two years of algebra for transfer students.
GENERAL ELECTIVES are courses chosen from outside your program of concentration.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| AMD | 113 | Fuel and Electrical (8 weeks) | 5 |
| AMD | 114 | Engines (8 weeks) | 5 |
| EDT | 101 | Mechanical Drawing | 2 |
| MTH | ** | Mathematics - Elective | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| AMD | 123 | Standard Power Train (8 weeks) | 5 |
| AMD | 124 | Brakes, Chassis, and Suspension (8 weeks) | 5 |
| ENL | 111 | English Composition I | 3 |
| MTH | *** | Mathematics - Elective | 3 |
| PED | | Physical Education | 1 |
| | | | 17 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| AMD | 232 | Service Procedures | 11 |
| MGT | 247 | Small Business Management | 3 |
| PHS | 500 | Physics Survey | 3 |
| | | | 17 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| AMD | 634 | State Inspection Repairs (8 weeks) | 6 |
| *Service Specialty Courses: student must complete one of the courses of which only two will be offered during a given semester (all are 8 week courses). | | | 6 |
| AMD | 635 | Automatic Transmission Repair (8 weeks)* | |
| AMD | 636 | Air Conditioning (8 weeks)* | |
| AMD | 637 | Engine Overhaul (8 weeks)* | |
| ENL | 201 | Technical Writing | 3 |
| | | Elective - General | 3 |
| | | | 18 |

MATHEMATIC ELECTIVES

| | | |
|---|---|---|
| MTH | ** | For two year career students:<br>MTH 105 - Intermediate Algebra<br>For transfer students: MTH 103 - College Algebra |
| MTH | *** | For two year career students:<br>MGT 111 Business Mathematics<br>or<br>MTH 500 - Technical Mathematics II<br>For transfer students: MTH 104 - College Trigonometry |

PROGRAM OBJECTIVES

The general goal of this program is to prepare the student for a successful career in the fields of automotive service technology, parts and service management, or automotive engineering technology. The program also provides the academic and practical educational experiences which enable students to pass a written exam for mechanic's certification, such as the National Institute for Automotive Service Excellence, and to pass the Pennsylvania Vehicle Safety Inspection written exam for certification as a vehicle safety inspection mechanic.

A graduate of Automotive Technology should be able to:

1. diagnose and repair common malfunctions of systems and components on popular makes of automobiles.
2. diagnose and repair malfunctions and wear patterns in any two of the following specialized automotive service areas:
   a. engines
   b. automatic transmissions
   c. air conditioning
3. relate basic laws of physics and principles of science to automotive systems and components in a manner which leads to trouble-diagnosis or product development.
4. record engineering data in mathematical terms and solve basic problems utilizing technical mathematics, elementary algebra, and trigonometry.
5. interpret engineering data given in the form of numerical quantification such as graphs or charts, algebraic expressions, or proportional relationships.
6. create and interpret fundamental engineering drawings.
7. demonstrate good management practices in relation to automotive service shop, including personnel, equipment, shop layout, and customer relations.
8. maintain automotive service records, dealership warranty procedures, and customer files.
9. demonstrate skill in basic oral communications and the ability to speak logically; use various types of oral communication techniques to promote sales and service and to develop leadership.
10. write clear, concise, and accurate repair orders, technical reports, service advertising copy, business memoranda, and business letters.
11. maintain records necessary for owning and operating a business, explain considerations involved in starting a new business, and state good management practices.
12. demonstrate knowledge of a lifetime sport which will provide recreation and promote physical fitness.
13. demonstrate an attitude of responsibility toward the automotive service and manufacturing industry and the world of work.

## Aviation Maintenance Technician (AC) Certificate/Two Years

In preparing to become an aircraft and powerplant maintenance technician, the student learns the theories of, and gains practical skills in such areas as aircraft powerplant maintenance and troubleshooting. This program is approved by the Federal Aviation Administration, and as a graduate the student will be qualified to take the examinations for the Airframe and Powerplant Maintenance Certificate. See page 5 for special admission requirements for this program.

**Types of Jobs**: Maintenance technician for airlines, fixed base operators, and manufacturer's services.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| APC | 711 | General Airframe & Powerplant | 13 |
| APC | 712 | Powerplant I | 3 |
| EDT | 104 | Aircraft Drawings | 2 |
| MTH | 715 | General Aviation Mathematics | 3 |
| | | | 21 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| APC | 721 | Powerplant II | 17 |
| | | | 17 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| APC | 831 | Powerplant III | 9 |
| APC | 832 | Airframe I | 10 |
| | | | 19 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| APC | 841 | Airframe II | 20 |
| | | | 20 |

PROGRAM OBJECTIVES

The objective of the Aviation Maintenance Technician program is to prepare the student to pass the written, oral, and practical Federal Aviation Administration Examination, and to master skills necessary for employment in aviation maintenance.

A graduate of the Aviation Maintenance Technician program should be able to:

1. prepare FAA Maintenance forms accurately.
2. locate specific information in various aviation publications.
3. read and comprehend varied aircraft and powerplant service publications.
4. recognize need for accuracy and thoroughness in work.
5. demonstrate professional inspection and operational skills.
6. observe and practice safety habits at all times.
7. demonstrate correct use of basic hand tools, special tools, and required testing equipment.
8. use mathematics and theory in aviation maintenance activities.
9. list, define, and correctly use aviation maintenance terminology.
10. maintain high professional standards in work as established by instruction and the FAA.

*Aviation Campus — Located at the Williamsport/Lycoming County Airport in Montoursville.*

## Broadcasting (BR)
## Associate Degree/Two Years

Announcers and news writers from nearby radio stations will assist the faculty in teaching modern broadcasting techniques using the College's 10-watt FM educational radio station. Background courses in management, government, economics, sociology, and psychology are included in the program.

**Types of Jobs:** Radio or television announcer, disc jockey, news commentator, public relations assistant, advertising copywriter.
*GENERAL ELECTIVES are courses chosen from outside your program of concentration.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| BRC | 110 | Introduction to Broadcasting | 3 |
| BRC | 115 | Technical Commercial Radio Operation | 3 |
| ENL | 111 | English Composition I | 3 |
| ENL | 202 | Fundamentals of Speech | 3 |
| SEC | 111 | Typewriting I | 3 |
| | | | 15 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| BRC | 125 | Introduction to Radio Station Operation | 3 |
| BRC | 233 | Announcing Techniques | 3 |
| ENL | 121 | English Composition II | 3 |
| GOV | 241 | State and Local Government | 3 |
| SOC | 111 | Introduction to Sociology | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| BRC | 123 | News Writing for Radio | 3 |
| BRC | 235 | Radio Station Operation and Management | 3 |
| ECO | 201 | Principles of Economics | |
| | | or | 3 |
| MGT | 110 | Principles of Business | |
| GOV | 231 | American Government - National | 3 |
| PED | | Physical Education | 1 |
| | | General Elective* | 3/4 |
| | | | 16/17 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| BRC | 241 | Survey of Radio Industry | 2 |
| BRC | 242 | Community Aspects of Broadcasting | 3 |
| ADV | 101 | Principles of Advertising | 3 |
| MGT | 247 | Small Business Management | 3 |
| PSY | 111 | General Psychology | |
| | | or | 3 |
| MGT | 235 | Business Psychology | |
| | | General Elective* | 3 |
| | | | 17 |

PROGRAM OBJECTIVES

The general objective of the Broadcasting program is to prepare the student for a position in the radio broadcasting industry in a small or middle size operation. Students are also prepared to transfer to a baccalaureate degree program.

The graduate of the Broadcasting program should be able to:

1. demonstrate proficiency in selecting and announcing music from records and be familiar with several kinds of recorded musical forms.
2. demonstrate proficiency in the use of the tools of the broadcast industry, such as control room boards, microphones, and various types of tapes.
3. secure, write, and edit news for broadcasting and apply a general knowledge of physical and social sciences.
4. demonstrate effective performance in the various types of specialized radio announcing including news, interviews, sports, and talk shows.
5. describe and estimate the impact of the governmental control exercised by the Federal Communications Commission and the Federal Trade Commission.
6. demonstrate the ability to acquire and evaluate appropriate demographic information and design a specific broadcast facility based on such information.
7. evaluate the nature of advertising in the United States as it relates to the economy of the nation and create usable broadcast advertising.
8. recognize the business basis of the individual broadcasting station, including operation of sales and management activities.
9. carry out both employee and leadership human relations skills in a commercial business setting.
10. explain the philosophical concepts of American broadcasting in contrast to those of other countries and relate this to the American form of government.
11. describe and analyze the history of the broadcast industry as it relates to current forms of radio broadcasting.
12. appraise the community responsibility of broadcast facilities and assess the need for public service based on FCC regulations.
13. utilize theory and operations skills required by FCC of all broadcasting equipment operators.
14. demonstrate mastery of the fundamentals of oral and written communications.
15. evidence facility in thinking and speaking extemporaneously.
16. demonstrate proficiency in job seeking including preparation of effective letters of application, resumes, and audition tapes.
17. demonstrate knowledge of a lifetime sport which will provide recreation and promote physical fitness.

## Business Management (BM)
## Associate Degree/Two Years

This program provides basic business knowledge and covers management theory and application procedures, business concepts, and the effect of business on the economy.

**Types of Jobs:** Junior-executive or management trainee positions in manufacturing, retailing, finance, banking, insurance, marketing, and government.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| MGT | 110 | Principles of Business | 3 |
| MGT | 111 | Business Mathematics | 3 |
| ACC | 112 | Accounting I | 3 |
| SEC | 111 | Typewriting I | 3 |
| ENL | 111 | English Composition I | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| MGT | 124 | Office Procedures | 2 |
| MGT | 125 | Finance | 3 |
| ACC | 122 | Accounting II | 3 |
| CSC | 118 | Fundamentals of Computer Science | 3 |
| ENL | 202 | Fundamentals of Speech | 3 |
| PED | | Physical Education | 1 |
| | | | 15 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| MGT | 230 | Business Communications | 3 |
| MGT | 231 | Business Law I | 3 |
| ACC | 230 | Managerial Accounting | 3 |
| | | Elective-Computer Science | 3 |
| | | Elective-Social Science | 3 |
| | | Elective | 3 |
| | | | 18 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| MGT | 248 | Supervision & Human Relations | 3 |
| MGT | 241 | Business Law II | 3 |
| MKT | 240 | Marketing | 3 |
| ECO | 201 | Principles of Economics | 3 |
| | | Elective | 3 |
| | | | 15 |

PROGRAM OBJECTIVES

The general objective of this program is to prepare the student for employment in the business management field. Alternatives may be to pursue advanced study or to add to the competencies of those currently employed in the field.

The graduate should be able to:

1. demonstrate specialized knowledge and skills applicable to immediate employment in the business management field.
2. demonstrate potential for managerial growth through use of tools of modern decision making.
3. illustrate an awareness of profit motives.
4. apply generally accepted accounting principles.
5. identify, compare, and utilize financial statements and management information systems.
6. evaluate consumer needs, and relate them to current business procedures.
7. relate in a positive manner to supervisors, peers, and subordinates on an interpersonal level.
8. apply knowledge of electronic data processing systems in making managerial decisions.
9. demonstrate skill in effective oral and written communication.
10. identify the legal aspects affecting business.
11. identify the need for physical fitness and positive leisure activities.

## Carpentry and Building Construction Technology (CB) Associate Degree/Two Years

This program covers the theoretical and practical aspects of light building construction. It also explores the principles and techniques of light-frame carpentry and masonry with emphasis on design, construction, cost estimation, and management.

**Types of Jobs:** Positions leading to supervisor, building technician, or construction superintendent.
**Recommended High School Subjects:** Two years of algebra, one year of science. One year of geometry is desirable.
*GENERAL ELECTIVES are courses chosen from outside your program of concentration.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| BCT | 111 | Woodworking for Carpenters | 4 |
| BCT | 112 | Construction Carpentry | 4 |
| ENL | 111 | English Composition I | 3 |
| MTH | 103 | College Algebra | 3 |
| PED | | Physical Education | 1 |
| | | | 15 |

SECOND SEMESTER

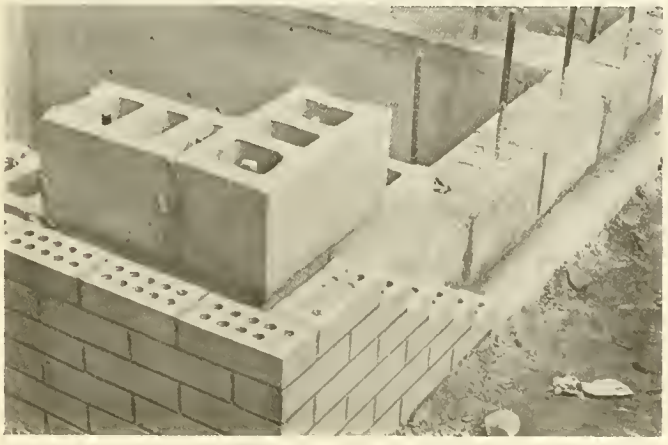
| | | | Credits |
|---|---|---|---|
| BCT | 121 | Estimating and Blueprints | 2 |
| BCT | 122 | Block Construction | 6 |
| ENL | 121 | English Composition II | 3 |
| MTH | 104 | College Trigonometry | 3 |
| PED | | Physical Education | 1 |
| | | | 15 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| BCT | 231 | Roof-framing Theory | 3 |
| BCT | 232 | Brick Construction | 5 |
| ELT | 110 | Electricity for the Trades | 3 |
| ECO | 201 | Principles of Economics | 3 |
| PHS | 100 | Physics-Mechanics | 4 |
| | | | 18 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| BCT | 241 | Advanced Carpentry | 4 |
| BCT | 242 | Building Construction Technology | 6 |
| BCT | 243 | Concrete Construction | 3 |
| | | Elective-General* | 3/4 |
| | | | 16/17 |



PROGRAM OBJECTIVES

The general objective is to prepare the student to obtain employment in the building construction industry, and insure that he/she has an understanding of all basic manipulative skills as well as related information needed to solve trade problems at the level of construction supervisors, job superintendents, building technicians or management personnel.

A graduate of the Building Construction Technology program should be able to:

1. write clear, concise, legible, and accurate technical reports and be skilled in oral communication as related to the construction industry.
2. demonstrate the basic manipulative skills of the trade which are necessary in laying out work, planning, erecting, and framing.
3. interpret and prepare plans, drawings, specifications, lines, symbols, and abbreviations on working drawings or blueprints.
4. demonstrate his/her ability to lay out and erect a platform or western frame structure.
5. analyze specifications and contract drawings and make accurate quantity take-offs and labor estimations to develop an estimated construction cost for a building project.
6. demonstrate basic knowledge and skill in masonry and concrete construction.
7. describe various types of materials and methods available to the construction trade.
8. describe business organization, financing, labor relations, selling, pricing, customer service, management, and other business principles.
9. describe the complexity of the building construction industry, the interrelationships of the various trades, and methods of communication and coordination among all trades and professions within the industry.
10. solve building construction problems using mathematical concepts learned in algebra and trigonometry.
11. apply scientific procedures learned in physics as they relate to problem solving techniques within the building construction area.
12. demonstrate knowledge of a lifetime sport which will provide recreation and promote physical fitness.

## Civil Engineering Technology (CT)
## Associate Degree/Two Years

This program prepares the student to assist civil engineers in the planning, designing and construction of highways, railroads, bridges, airfields, buildings, and dams. Experience with modern equipment prepares the student to meet the challenge of recent technical developments.

**Types of Jobs:** Engineering technician, surveyor, inspector, drafting, cartographer, design technician, and photogrammetrist.
**Recommended High School Subjects:** Two years of algebra, one year of science.
*GENERAL ELECTIVES are courses chosen from outside your program of concentration. (In area of Communications, Humanities, Social Science, Mathematics, Science, Allied Health, Business or Computer Science.)

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| CET | 111 | Materials of Construction | 2 |
| CET | 112 | Engineering Drawing | 3 |
| CET | 113 | Introductory Surveying | 2 |
| ENL | 111 | English Composition I | 3 |
| MTH | 103 | College Algebra | 3 |
| PED | | Physical Education | 1 |
| | | Elective-General* | 3/4 |
| | | | 17/18 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| CET | 121 | Plane Surveying | 4 |
| CET | 122 | Topographic Drawing and Cartography | 3 |
| CET | 244 | Photogrammetry | 3 |
| ENL | 121 | English Composition II | 3 |
| MTH | 104 | College Trigonometry | 3 |
| PED | | Physical Education | 1 |
| | | | 17 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| CET | 231 | Route Surveying | 4 |
| CET | 232 | Origin, Distribution & Behavior of Soils | 3 |
| CET | 233 | Statics | 3 |
| CET | 234 | Highway Engineering Technology | 3 |
| PHS | 100 | Physics-Mechanics | 4 |
| | | | 17 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| CET | 241 | Advanced Surveying | 3 |
| CET | 242 | Fluid Mechanics | 3 |
| CET | 243 | Strength of Materials | 3 |
| ECO | 201 | Principles of Economics | 3 |
| CSC | 100 | FORTRAN IV Programming | 3 |
| | | Elective-General* | |
| | | or | 3 |
| | | Approved Co-op | |
| | | | 18 |

### PROGRAM OBJECTIVES

The general objective of the Civil Engineering Technology program is to enable the student to evaluate his/her interest and abilities within the broad field of civil engineering. This will enable the student to make a choice regarding future employment or specialized study in a specific field of civil engineering.

A graduate of the Civil Engineering Technology program should be able to:

1. differentiate between various types of surveys and select and use the proper instruments and methods to satisfy the requirements for each survey. These will include boundary, control, construction, topographic and geodetic surveys.
2. construct a cartographic and topographic map using recognized mapping procedures.
3. apply the functions and principles of aerial photographs in making engineering measurements and topographic maps.
4. apply basic criteria used to design, locate, and estimate earthwork quantities for highway construction.
5. determine and use the engineering properties of the basic construction materials such as steel, concrete, wood, and soil.
6. apply the functions of basic structural components and be able to design these components to resist applied loads.
7. demonstrate working knowledge of mechanics of compressible and incompressible fluid flow and their applications to piping systems, pumps, open channels, and reservoirs.
8. communicate effectively through the skills learned in English Composition and Engineering Drawing.
9. utilize social science concepts to deepen an understanding of self and to relate more effectively to others.
10. use concepts developed in algebra and trigonometry to solve problems related to civil engineering.
11. apply scientific procedures learned in physics to the solution of engineering problems.
12. recognize the need for physical fitness and lifelong recreational activities through physical education.
13. prepare computer programs in order to solve engineering problems.

## Clerical Studies (BT)
## Certificate/One Year
## (Starts in January of each year)

This program provides the fundamentals of typewriting, machine calculation, and clerical procedures. It also covers indexing principles, filing, and basic office techniques.

**Types of Jobs:** Clerk-typist, business machine operator, filing, general clerical, payroll work, Dictaphone transcription.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| SEC | 111 | Typewriting I | 3 |
| CLS | 717 | Clerical Procedures | 7 |
| ENL | 711 | Communications | 3 |
| | | Elective | 3 |
| | | | 16 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| MGT | 111 | Business Mathematics | 3 |
| MGT | 230 | Business Communications | 3 |
| CLS | 728 | Clerical Workshop | 8 |
| SEC | 121 | Typewriting II | 3 |
| | | | 17 |

PROGRAM OBJECTIVES

The general objective of the Clerical Studies program is to enable students to enter the business world in a clerical capacity with competency and efficiency.

The graduate should be able to:

1. demonstrate skill in performing routine office tasks.
2. demonstrate skill in effective written and oral communications.
3. employ competencies in basic clerical office procedures.
4. illustrate basic knowledge of modern office equipment and office supplies.
5. apply working knowledge of reprographics, word processing, and computational skills.
6. assess and influence behavior among supervisors, peers, and subordinates.
7. apply general knowledge of the social sciences, and possess an awareness of their effect on our society.

## Computer Operator (CO)
## Certificate/One Year

This program trains the student in all aspects of data processing operations and the effective utilization of the equipment. The student is prepared for entry into industry as a qualified computer operator. This program provides an option for those students who have an interest in and aptitude for a data processing career, but do not desire to be programmers.

**Types of Jobs:** Computer operator, peripheral data processing equipment operator, operations manager, data and job control managers and technical sales representatives.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| COP | 713 | Computer Operations I | 6 |
| CSC | 118 | Fundamentals of Computer Science | 3 |
| ACC | 112 | Accounting I | 3 |
| SEC | 709 | Typewriting | 1 |
| ENL | 111 | English Composition I | 3 |
| | | | 16 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| COP | 723 | Computer Operations II | 4 |
| COP | 724 | Computer Operations Internship | 2 |
| CSC | 120 | Business Computer Applications | 3 |
| ENL | 201 | Technical Writing | 3 |
| | | Computer Science Elective | 3/4 |
| | | | 15/16 |

PROGRAM OBJECTIVES

The general objective of the Computer Operator program is to prepare the student to obtain employment in the field of computer operations in various positions such as computer operator, peripheral equipment operator, data entry clerk, or data controller.

The graduate should be able to:

1. operate computer systems.
2. demonstrate competent communication skills in technical writing.
3. relate in a positive manner to supervisors, peers, and subordinates on an interpersonal level.
4. utilize system utility programs.
5. interpret and manage data controls from data entry to completed output.
6. interpret and utilize written documentation for program execution.
7. apply job control language to execute computer jobs.
8. operate peripheral and related data processing equipment.
9. maintain operation logs and libraries.
10. perform routine housekeeping tasks in the computer area and general maintenance on the equipment.
11. apply generally accepted accounting principles.

## Computer Science Technology (CS)
## Associate Degree/Two Years

This program trains the student in various computing systems in electronic data processing. It provides a broad range of knowledge of programming techniques and experience in operation of computer systems and peripheral data processing equipment. The curriculum offers a secondary background in business accounting and management or math and science.

**Types of Jobs:** Computer programmer, junior systems analyst, sales representative, related technician.
**Recommended High School Subjects:** Two units of mathematics including algebra.
*GENERAL ELECTIVES are courses chosen from outside your program of concentration.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| CSC | 118 | Fundamentals of Computer Science | 3 |
| CSC | 119 | RPG Programming I | 3 |
| ACC | 112 | Accounting I | 3 |
| ENL | 111 | English Composition I | 3 |
| SEC | 709 | Typewriting | 1 |
| | | Mathematics Requirement** | 3/4 |
| | | | 16/17 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| CSC | 127 | Assembler Language Programming | 4 |
| CSC | 128 | COBOL Programming I | 3 |
| ENL | 121 | English Composition II | 3 |
| PED | | Physical Education | 1 |
| | | Mathematics Requirement** | 3/4 |
| | | Elective-Math/Science/Business | 3/4 |
| | | | 17/19 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| CSC | 234 | FORTRAN & Linear Programming | 3 |
| CSC | 245 | Computer Software Systems | 3 |
| CSC | 238 | COBOL Programming II | 3 |
| MTH | 201 | Elementary Statistics I | 3 |
| PED | | Physical Education | 1 |
| | | Elective-Math/Science/Business | 3/4 |
| | | | 16/17 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| CSC | 241 | Systems Analysis and Design | 4 |
| CSC | 249 | RPG Programming II | 3 |
| | | Computer Science Elective | 3 |
| | | Elective-Math/Science/Business | 3/4 |
| | | Elective-General | 3/4 |
| | | | 16/18 |

**Students are encouraged to meet the 6 credit minimum in mathematics at the highest possible level. Suggested alternatives:

a. MTH 101-102 sequence (Intro. to Math) - minimum allowable math sequence.

b. MTH 103-104 sequence (College Algebra and College Trigonometry) - recommended via placement test and for students wanting strong math background.

c. MTH 238-248 sequence (Calculus I and II) - recommended via placement test and for students with strong high school background desiring highest level of mathematical preparation.

PROGRAM OBJECTIVES

The general objective of the Computer Science program is to prepare the student to obtain employment as a computer programmer or a junior systems analyst. Alternatives may be to pursue advanced study or to add to the competencies of those currently employed in the field.

The graduate should be able to:

1. write effective, efficient computer programs in RPG, FORTRAN and Assembler languages.
2. demonstrate ability to reason logically, to analyze, to synthesize, and to evaluate technical information and to apply these processes to pertinent problems.
3. demonstrate competent communication skills in oral and written form.
4. relate in a positive manner to supervisors, peers, and subordinates on an interpersonal level.
5. prepare written documentation of computer programs.
6. assist in the design of business systems.
7. utilize system software packages to execute computer jobs.
8. identify the concepts and organization of the various operating systems.
9. design and incorporate data controls from data entry to completed output.
10. use interactive programming techniques.
11. employ the basic operations of a computer system and related data processing equipment.
12. apply generally accepted accounting and mathematical principles.
13. apply general knowledge of the social sciences, and possess an awareness of their effect on our society.
14. identify the need for physical fitness and positive leisure activities.

## Construction Carpentry (CC) Certificate/Two Years

Students in this program receive laboratory instruction on the proper use of hand tools, portable power tools and portable power equipment, and become licensed in the use of power activated tools. The necessary classroom theory on methods, procedures, and materials is given. The program includes working on the construction of a residential building under supervision of qualified instructors.

**Types of Jobs:** Apprentice carpenters or masons, with advancement possibilities, also employment in plants or factories where building units, components, or building materials are made or sold.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| CNC | 711 | Surveying, Layout & Blueprint Reading (8 weeks) | 2 |
| CNC | 712 | Concrete and Block (8 weeks) | 4 |
| CNC | 713 | Brick and Stone (8 weeks) | 6 |
| ENL | 711 | Communications | 3 |
| MTH | 710 | Technical Mathematics I | 3 |
| | | | 18 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| CNC | 721 | Framing and Sheathing (8 weeks) | 6 |
| CNC | 722 | Exterior Finish (8 weeks) | 6 |
| ARC | 102 | Basic Architectural Drafting | 3 |
| | | | 15 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| CNC | 831 | Interior Finish (8 weeks) | 6 |
| CNC | 832 | Interior Trim (8 weeks) | 6 |
| CNC | 833 | Blueprints and Specifications | 3 |
| | | Optional Elective | 0/3 |
| | | | 15/18 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| CNC | 841 | Specialty & Related Trades (8 weeks) | 4 |
| CNC | 842 | Practical Construction Experience (8 weeks) | 4 |
| CNC | 843 | Building Trades Estimating (8 weeks) | 3 |
| CNC | 844 | Personal & Job Orientation (8 weeks) | 3 |
| | | Optional Elective | 0/3 |
| | | | 14/17 |

PROGRAM OBJECTIVES

The general objective of this program is to prepare the graduating student with basic skills and knowledge for entry into the building construction industry.

A graduate of the Construction Carpentry program should be able to:

1. demonstrate basic knowledge and skills in the use of the transit and other measuring devices in site preparation and building layout.
2. demonstrate basic knowledge and skills in masonry and concrete construction as applied to building construction industry.
3. demonstrate basic knowledge and skills in layout and construction of building framework and sheathing.
4. demonstrate basic knowledge and skills in the installation of exterior siding, roofing, trim and millwork, and building insulation.
5. demonstrate basic knowledge and skills in the installation of interior finish, floors, walls and ceilings.
6. demonstrate basic knowledge and skills in the installation of doors and interior trim; build and/or install cabinet work and finish stairways.
7. demonstrate basic knowledge of trades related to the building industry, such as ceramic tile and resilient floor installations.
8. look for, secure, and keep a job and have insight into possible self-employment, the importance of customer service and personal goals.
9. read and interpret blueprints and specifications, prepare basic architectural drawings, and estimate building costs.
10. use the basic skills of oral and written communication desirable for understanding instructions and presenting ideas and instructions in a clear and logical manner.
11. use basic mathematical skills necessary for job performance and for the development of visualization skills and logical thought processes.
12. practice safe work habits and demonstrate attitudes of responsibility and craftsmanship.

## Dental Hygiene (DH)
## Associate Degree/Two Years

The Dental Hygiene Program has been developed to prepare young men and women for licensure so that they may pursue a variety of career opportunities within the dental hygiene profession. Clinical experience and field trips are integrated with classroom instruction to provide a diversified background. See page 5 for special admission requirements for this program.

**Types of Jobs:** Private dental practice, dental health education, dental hygiene education, community health.
**Required High School Courses:** Because of the strong emphasis on science in the dental hygiene program, applicants must have successfully completed one year of high school biology and two years of high school algebra. It is also recommended that the applicant have an additional laboratory science (i.e., physics, chemistry).

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| DHG | 100 | Introduction to Dental Hygiene | 4 |
| DHG | 115 | Oral Anatomy & Histology | 3 |
| BIO | 115 | Human Anatomy and Physiology I | 4 |
| CHM | 107 | General Organic Chemistry | 3 |
| ENL | 111 | English Composition I | 3 |
| PED | | Physical Education | 1 |
| | | | 18 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| DHG | 101 | Clinical Dental Hygiene I | 4 |
| DHG | 120 | Oral Radiology | 2 |
| DHG | 125 | Dental Materials | 3 |
| BIO | 125 | Human Anatomy and Physiology II | 4 |
| BIO | 201 | Microbiology | 4 |
| | | | 17 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| DHG | 200 | Clinical Dental Hygiene II | 4 |
| DHG | 235 | Periodontics | 1 |
| DHG | 237 | Pharmacology & Emergencies | 3 |
| DHG | 239 | General & Oral Pathology | 2 |
| FHD | 112 | Nutrition | 3 |
| PSY | 111 | General Psychology | 3 |
| | | | 16 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| DHG | 201 | Clinical Dental Hygiene III | 4 |
| DHG | 240 | Dental Practice Orientation | 1 |
| DHG | 241 | Community Dental Health | 2 |
| DHG | 243 | Dental Specialties | 3 |
| ENL | 202 | Fundamentals of Speech | 3 |
| PED | | Physical Education | 1 |
| | | Elective-Social Science | 3 |
| | | | 17 |

PROGRAM OBJECTIVES

The general program objective of the Dental Hygiene program is to prepare students to successfully pass the National Dental Hygiene Board examinations, the Northeast Regional Boards, the required examinations for selected states, and to qualify for employment as dental hygienists.

The Dental Hygiene graduate should be able to:

1. apply knowledge of the design, techniques, and sharpening methods of instruments utilized in dental hygiene procedures.
2. identify anatomical landmarks of the head and neck and deviations from normal.
3. use correct anatomical terminology in classifying all permanent and primary teeth on the basis of morphological and histological characteristics and occlusion.
4. incorporate knowledge of microbiology in aseptic techniques while performing a complete and thorough prophylaxis.
5. demonstrate appropriate preventive oral health procedures.
6. develop, process, and evaluate all types of intra and extra oral radiographs.
7. apply interpersonal, motivational, and communication knowledge and skills from English, speech, psychology, and social sciences to work with patients, other members of the dental health team, and community groups.
8. operate all dental equipment safely, effectively, and efficiently.
9. demonstrate a commitment to professional organizations through attendance at meetings, seminars, and continuing education programs.
10. apply knowledge of dental hygiene skills in a variety of settings (e.g., private practice, specialty practice, public institutions, industry, public health, etc.).
11. administer first aid and emergency treatment.
12. explain properties, dosage, actions, and reactions of drugs used in dentistry.
13. utilize the concepts of anatomy, physiology, and nutrition in the relationship of dental health to total health.
14. record with accuracy all vital signs, health histories, patient records and forms with consideration of legal guidelines.
15. develop sound ethical, philosophical, and moral professional characteristics.
16. apply concepts of chemistry in analyzing dental materials and in relationship to body processes.
17. demonstrate knowledge of a lifetime sport which will provide recreation and promote physical fitness.

## Diesel Mechanics (DM)
## Certificate/Two Years

This program presents theories and develops manipulative skills in the care of diesel-powered highway vehicles, industrial and marine engines, and commercial powerplants. Some specialization is available in fuel injection service, engine repair and rebuilding, power train, brakes, steering, and chassis work.

**Types of Jobs:** Heavy duty truck mechanic for truck dealership, independent garage, truck fleet, or contractor. Industrial engine mechanic in mining, quarrying, construction equipment, or marine waterways fleet. Also field service representative for diesel engine manufacturer or distributor.

FIRST SEMESTER

| | | Credits |
|---|---|---|
| DMC 711 | Introduction to Diesel Mechanics (8 weeks) | 6 |
| DMC 712 | Internal Combustion Engines (8 weeks) | 6 |
| MTH 710 | Technical Mathematics I | 3 |
| | | 15 |

SECOND SEMESTER

| | | Credits |
|---|---|---|
| DMC 721 | Four-Cycle Diesel Engines (8 weeks) | 6 |
| DMC 722 | Two-Cycle Diesel Engines (8 weeks) | 6 |
| ENL 711 | Communications | 3 |
| | | 15 |

THIRD SEMESTER

| | | Credits |
|---|---|---|
| DMC 831 | Fuel Injection Systems I (8 weeks) | 6 |
| DMC 832 | Fuel Injection Systems II (8 weeks) | 6 |
| | Optional Elective | 0/3 |
| | | 12/15 |

FOURTH SEMESTER

| | | Credits |
|---|---|---|
| DMC 841 | Truck Tractor Power Train (8 weeks) | 6 |
| DMC 842 | Truck Tractor Chassis (8 weeks) | 6 |
| | Optional Elective | 0/3 |
| | | 12/15 |

PROGRAM OBJECTIVES

The goal of this program is to prepare the student for a successful career as a diesel mechanic in transportation, construction, marine, and related fields. The program also provides the academic and practical educational experiences which enable students to pass the Pennsylvania Vehicle Safety Inspection Certification as a vehicle safety inspection mechanic.

A graduate of Diesel Mechanics should be able to:

1. diagnose and repair common malfunctions of systems and components on popular makes of diesel engines.
2. demonstrate correct service of:
   a. diesel engines
   b. truck transmission and drive trains
   c. fuel systems, and other engine accessories
3. perform state inspections.
4. diagnose equipment failure, isolate faulty systems or components, and make necessary repairs.
5. interpret wiring diagrams, test and make repairs to starting, charging, lighting, and accessory systems on vehicles.
6. use elementary math operations (addition, subtraction, multiplication, division) including decimals, fractions, and conversions, as they apply to diesel mechanics.
7. write clear, concise, and accurate abstracts and reports.
8. demonstrate safe work habits and describe their importance as they apply to industry and OSHA.
9. demonstrate an attitude of responsibility toward the diesel service and manufacturing industry and the world of work.

## Dietetic Technician (DT)
## Associate Degree/Two Years

The Dietetic Technician program is a study of food production, patient nutritional care and dietary administration as it relates to health care institutions. The students concentrate on the normal and therapeutic needs of humans, food production, planning and sanitation, as well as management skills and accounting.

**Types of Jobs:** Middle managers in dietary departments of health care institutions. Responsibilities include supervision of production and tray service to patients. Assist dietitians in patient contact, nutritional status and care data, as well as employee supervision and training. May also be employed as school cafeteria directors or in commercial quantity food production.
**Recommended High School Courses:** One unit of high school biology or chemistry, and high school math.
*GENERAL ELECTIVES are courses chosen from outside your program of concentration.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| FHD | 111 | Introductory Foods | 3 |
| FHD | 112 | Nutrition | 3 |
| FHD | 113 | Field Experience in Management Systems I (2nd 8 weeks) | 1 |
| FHD | 114 | Introduction to Food Service Administration and Medical Care Organization | 2 |
| FHD | 115 | Purchasing, Storage & Sanitation | 3 |
| BIO | 110 | Applied Human Physiology | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| FHD | 121 | Quantity Food Preparation | 3 |
| FHD | 122 | Diet Therapy with Dietetic Seminar | 3 |
| FHD | 123 | Field Experience in Management Systems II | 3 |
| FHD | 125 | Menu Planning and Cost Control | 3 |
| ENL | 111 | English Composition I | 3 |
| PSY | 111 | General Psychology | 3 |
| | | | 18 |

SUMMER TERM

| | | | Credits |
|---|---|---|---|
| FHD | 250 | Hospitality, Dietetic Work Experience (Management Systems III) | 1 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| FHD | 231 | Field Experience in Management Systems IV | 3 |
| FHD | 235 | Personnel Management, Work Simplification | 3 |
| ACC | 112 | Accounting I | |
| | | or | 3 |
| ACC | 121 | Elementary Accounting | |
| ENL | 121 | English Composition II | |
| | | or | 3 |
| ENL | 202 | Fundamentals of Speech | |
| PSY | | Elective - Psychology | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| FHD | 234 | Health Care Delivery Systems | 3 |
| FHD | 242 | Field Experience in Management Systems V | 3 |
| FHD | 245 | Equipment and Layouts | 3 |
| FHD | 246 | Hospitality Merchandising | |
| | | or | 3 |
| FHD | 241 | Beverage Management & Catering | |
| SOC | 111 | Introduction to Sociology | 3 |
| | | | 15 |

PROGRAM OBJECTIVES

The general objective of the Dietetic Technician program is to prepare students for employment in medical care institutions in diet planning, kitchen supervision, and patient education. The program is designed to satisfy regulatory agency requirements for Dietetic Technicians and also allows students to continue their education toward a baccalaureate degree.

The Dietetic Technician graduate should be able to:

1. demonstrate proper techniques of food preparation and food handling sanitation.
2. plan and carry out the management of work schedules, job descriptions, menu planning, purchasing, portion control, and patient tray and cafeteria service.
3. describe equipment available on the market, and plan arrangement, operation, and maintenance for efficiency and safety.
4. demonstrate creative and thorough thinking in personnel evaluations and in solving management problems.
5. display knowledge and practice of adequate professional appearance, and appropriate attitude and standards.
6. describe the physiological effects of food in the human body.
7. show signs of developing a sense of worth and responsibility, not only as a dietetic technician, but in the community.
8. demonstrate ability to communicate clearly, both orally and in writing, to fellow employees and patients.
9. demonstrate understanding of financial and budgetary controls in health care institutions.
10. assist with dietary clerical records.
11. demonstrate knowledge of the responsibilities of a dietitian and identify areas in which he/she may be of assistance, and areas in which he/she should ask for consultation.
12. apply knowledge of physical activities and sports for the maintenance of good health.

## Electrical Construction (EW)
## Certificate/Two Years

This program stresses the manual skills needed to install wiring and electrical equipment, using blueprints, in buildings. Required courses in mathematics, science, and communications enhance the student's vocational opportunities.

**Types of Jobs:** Electrical construction union apprentice, industrial maintenance, self-employment in residential and commercial wiring and in electrical shops, electrical tester or inspector, power company employee.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| ELC | 711 | Direct Current Fundamentals | 6 |
| ELC | 712 | Basic Wiring Lab | 3 |
| ELC | 713 | Motor Rewinding | 3 |
| ENL | 711 | Communications | 3 |
| MTH | 710 | Technical Mathematics I | 3 |
| | | | 18 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| ELC | 721 | Basic Motor Control | 4 |
| ELC | 722 | Alternating Current Fundamentals | 6 |
| ELC | 723 | Residential Blueprint and Code | 4 |
| MTH | 500 | Technical Mathematics II | 3 |
| | | | 17 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| ELC | 832 | Advanced Motor Control | 3 |
| ELC | 833 | Basic Electrical Construction Lab | 3 |
| ELC | 834 | Basic Electronics for Industry | 6 |
| ELT | 113 | Accident Prevention | 2 |
| EDT | 102 | Engineering Drafting | 2 |
| | | Optional Elective | 0/3 |
| | | | 16/19 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| ELC | 843 | Industrial Motor Control | 4 |
| ELC | 844 | Commercial & Industrial Blueprint Reading | 4 |
| ELC | 845 | Advanced Electrical Construction | 3 |
| ELC | 846 | Electrical Machinery, Analysis and Repair | 4 |
| PHS | 500 | Physics Survey | 3 |
| | | | 18 |

PROGRAM OBJECTIVES

This program will prepare the graduate for employment in the field of residential, commercial, or industrial electrical construction and maintenance.

A graduate of the Electrical Construction program should be able to:

1. demonstrate the ability to function in a variety of environments, using the accepted safety procedures and work quality standards of the trade.
2. demonstrate familiarity with the interdisciplinary skills of electrical theory, mathematics, and physics, and be able to utilize these skills as they relate to the construction and operation of electrical systems.
3. identify and demonstrate correct use and care of the tools and materials utilized in the trade, and be capable of correctly requisitioning them from a stockroom or supplier.
4. demonstrate basic knowledge of reading and developing blueprints, and be capable of using this information to perform actual installations which comply with the National Electrical Code.
5. interpret ideas and formulate plans through communication with others.
6. operate, maintain, and repair rotating electrical machines.
7. demonstrate working knowledge of electrical construction procedures in the areas of residential, commercial, and industrial installations.
8. demonstrate the use of troubleshooting equipment and standard testing procedures.
9. operate and maintain electrical control systems.
10. demonstrate knowledge of basic electronic control circuitry, devices, and schematic diagrams.

## Electrical Technology (EL)
## Associate Degree/Two Years

This program prepares the student to work as an electrical technologist with electronic equipment and electrical machinery. It stresses electrical basics, including theory, circuits, industrial electronics, electrical machinery, and electrical construction. Required courses in mathematics, science and communications enhance the student's vocational opportunities.

**Types of Jobs:** Electrical technology and laboratory work, industrial maintenance technician, troubleshooter for electrical equipment manufacturers.
**Recommended High School Subjects** Two years of algebra, one year of science.
*GENERAL ELECTIVES are courses chosen from outside your program of concentration.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| ELT | 111 | Direct Current Fundamentals | 5 |
| ELT | 112 | Basic Wiring Lab | 3 |
| ELT | 113 | Accident Prevention | 2 |
| ENL | 111 | English Composition I | 3 |
| MTH | 103 | College Algebra | 3 |
| PED | | Physical Education | 1 |
| | | | 17 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| ELT | 121 | Residential Blueprint Reading/ National Electrical Code | 4 |
| ELT | 122 | Alternating Current Fundamentals | 5 |
| ELT | 123 | Basic Electrical Construction Lab | 2 |
| ENL | 121 | English Composition II | 3 |
| MTH | 104 | College Trigonometry | 3 |
| | | | 17 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| ELT | 233 | Basic Electronics | 6 |
| ELT | 234 | Electrical Motor Control | 4 |
| PHS | 100 | Physics-Mechanics | 4 |
| PED | | Physical Education | 1 |
| | | Elective-General* | 3/4 |
| | | | 18/19 |

FOURTH SEMESTER

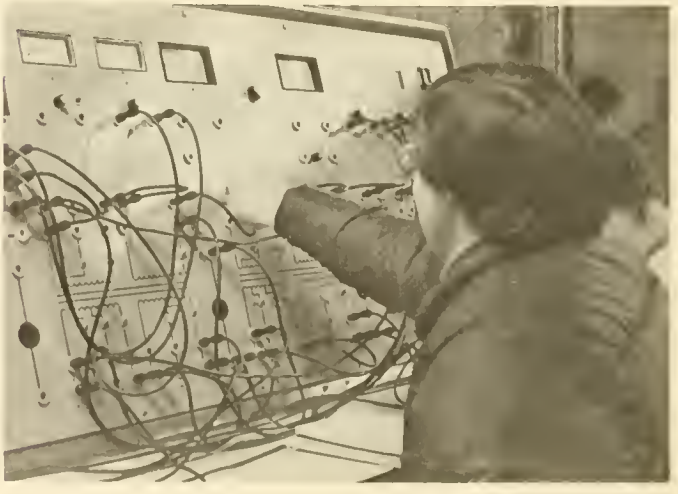
| | | | Credits |
|---|---|---|---|
| ELT | 241 | Electrical Systems Analysis | 2 |
| ELT | 242 | Electrical Construction Blueprint Reading | 4 |
| ELT | 244 | Advanced Electrical Theory | 3 |
| ECO | 201 | Principles of Economics | 3 |
| PHS | 101 | Physics-Heat and Light | 4 |
| | | | 16 |

### PROGRAM OBJECTIVES

This program will equip the student with the skills necessary to understand and apply the theory related to the field of electrical technology. The program structure encompasses both manual and theoretical aspects of the trade, and prepares students for the option of continuing their education toward a baccalaureate degree.

Upon completion of the program, the graduate should be able to:

1. demonstrate the ability to perform in a variety of electrical fields at a highly technical level, and apply accepted safety standards and the most recent developments in the electrical industry.
2. demonstrate the ability to use algebra, trigonometry, and physics in the design, development, and analysis of electrical and electronic circuits and systems.
3. compile parts lists and order forms which demonstrate knowledge of catalogs, coding, and numbering of components, devices, hardware, and materials.
4. display the ability to interpret and develop blueprints, schematic diagrams, and wiring diagrams, and transform them into functional systems that comply with the National Electrical Code and/or other specs.
5. generate complete and concise evaluations of electrical and electronic circuits and systems, and communicate that information verbally and/or in writing to others in or out of the field.
6. possess basic knowledge of construction procedures and electrical wiring techniques.
7. demonstrate knowledge of test equipment, instrumentation, and electrical/electronic theory, including complex numbers and network theorems used to analyze, troubleshoot, repair, and operate electrical/electronic circuits, systems, and equipment.
8. demonstrate knowledge of the theory and mechanics of rotating machinery, static and logic control circuitry, transformer banks, and instrumentation.
9. demonstrate decision-making processes and the need for interpersonal competition and individual growth.
10. describe United States business cycles, investments, and personnel policies and procedures and their relationship to the electrical industry.
11. recognize the need for physical fitness and lifelong recreational activities.



## Electronics Technology (ET)
## Associate Degree/Two Years

This program presents a broad theoretical and practical study of analog and digital electronic circuits and systems. Practical laboratory work with "industry standard" test equipment prepares the student to assume technician level positions in a wide range of electronics based industries.

**Types of Jobs:** Electronics engineering technician, electronic lab technician, instrumentation technician, field service technician, technical writer.
**Recommended High School Subjects:** Two years of algebra, one year of science.
*GENERAL ELECTIVES are courses chosen from outside your program of concentration.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| ENT | 111 | DC - AC Theory | 5 |
| ENT | 115 | Electronics Laboratory I | 3 |
| ENT | 116 | Introduction to Solid-State Devices | 3 |
| ENL | 111 | English Composition I | 3 |
| MTH | 103 | College Algebra | 3 |
| | | | 17 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| ENT | 125 | Intermediate Solid State Devices and Circuits | 5 |
| ENT | 126 | Electronics Laboratory II | 3 |
| ENT | 127 | Introduction to Digital Electronics | 3 |
| ENL | 121 | English Composition II | |
| | | or | 3 |
| ENL | 201 | Technical Writing | |
| MTH | 104 | College Trigonometry | 3 |
| | | | 17 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| ENT | 233 | Communication Circuits and Systems | 5 |
| ENT | 237 | Electronics Laboratory III | 3 |
| ENT | 238 | Intermediate Digital Electronics | 3 |
| PED | | Physical Education | 1 |
| | | Elective - Math/Science | |
| | | or | 3/4 |
| | | Elective - Computer Science | |
| | | | 15/16 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| ENT | 246 | Introduction to Microprocessors | 5 |
| ENT | 247 | Electronics Laboratory IV | 3 |
| PED | | Physical Education | 1 |
| | | Elective - Electronics** | 3 |
| | | Elective - General* | 3/4 |
| | | | 15/16 |

**Electives - Electronics – Only one may be offered in any given year: ENT 248, Advanced Circuit Analysis, ENT 241, Calibration and Standardization.

PROGRAM OBJECTIVES

The overall goal of the Electronics Technology program is to prepare the student for employment as an electronic technician in a wide variety of electronic or related industries.

A graduate should be able to:

1. apply working knowledge of AC and DC circuits.
2. demonstrate basic knowledge of solid state devices.
3. describe the theory of various electronic communication systems.
4. analyze circuits containing various types of electronic devices.
5. demonstrate basic knowledge of digital electronics, logic circuits, and microprocessors.
6. solve mathematical problems relating to circuit analysis, digital electronics and other systems.
7. communicate verbally with others and write technical reports.
8. operate laboratory type cathode ray oscilloscopes.
9. operate parameter measuring equipment and signal generating equipment.
10. program microprocessor based systems and interface peripheral devices.
11. establish good working relationship with fellow workers and society.
12. apply knowledge of physical activities for the maintenance of good health.
13. describe contributions of our cultural heritage and illustrate the responsibilities of a good citizen.

## Engineering Drafting Technology (ED) Associate Degree/Two Years

This program prepares the student to make a variety of engineering drawings and calculations. It provides a broad knowledge of mechanical drafting and engineering procedures, and background skills in mathematics, science and communication.

**Types of Jobs:** Mechanical detail and layout drafting, engineering assistant or aide, checker, field department supervisor, or jobs in related areas such as planning, traffic safety, maintenance, and purchasing.
**Recommended High School Subjects:** Two years of algebra, one year of science.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| EDT | 106 | Industrial Processes | 2 |
| EDT | 111 | Basic Drafting I (8 weeks) | 4 |
| EDT | 112 | Basic Drafting II (8 weeks) | 4 |
| ENL | 111 | English Composition I | 3 |
| MTH | 103 | College Algebra | 3 |
| PED | | Physical Education | 1 |
| | | | 17 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| EDT | 121 | Power Transmission (8 weeks) | 4 |
| EDT | 122 | Mechanisms (8 weeks) | 4 |
| ENL | 121 | English Composition II | 3 |
| MTH | 104 | College Trigonometry | 3 |
| PED | | Physical Education | 1 |
| | | | 15 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| EDT | 231 | Detail & Assembly Drawings (8 weeks) | 4 |
| EDT | 232 | Applied Drafting Techniques (8 weeks) | 4 |
| PHS | 100 | Physics-Mechanics | 4 |
| | | Elective | 3/4 |
| | | | 15/16 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| EDT | 241 | Advanced Detail I (8 weeks) | 4 |
| EDT | 242 | Advanced Detail II (8 weeks) | 4 |
| PHS | 106 | Introduction to Metallurgy | 4 |
| | | Elective | 3/4 |
| | | | 15/16 |

PROGRAM OBJECTIVES

The general objective of the program is to prepare the student with the skills and competencies necessary for entry-level employment in the engineering drafting field in various capacities.

A graduate of this program should be able to:

1. apply the basic elements of drafting.
2. analyze and design simple power transmission installations.
3. make detail and assembly drawings.
4. detail casting drawings from sketches and models.
5. redesign castings into weldment drawings.
6. draw the various methods of piping.
7. detail assembly and sub-assembly drawings from layouts.
8. describe and apply the various methods of manufacturing as they relate to engineering drafting.
9. describe and apply principles of physics and metallurgy to engineering drafting.
10. utilize the appropriate mathematical skills and competencies to solve applied problems in engineering drafting.
11. communicate effectively in small group and interpersonal situations that may occur in industry.
12. function as an informed and participating citizen in a democratic society through exposure to the humanities and social sciences.
13. utilize and develop the fundamental skills provided through exposure to lifetime sports.

## Floriculture (FL)
## Ornamental Horticulture Technology (OH)
## Associate Degree/Two Years

This program involves the business of growing, designing, and selling flowers, foliage, and related materials. It is directed toward employment with florists in planning, growing, designing, managing, and selling floral products and services.

**Types of Jobs:** Flower propagation; flower sales, both retail and wholesale; flower shop management; assisting in plant pathology; own business.
*GENERAL ELECTIVES are courses chosen from outside your program of concentration.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| OHT | 114 | Horticulture Soils | 3 |
| OHT | 115 | Woody Plants I | 2 |
| OHT | 116 | Herbaceous Plants | 3 |
| BIO | 111 | Basic Botany | 3 |
| ENL | 111 | English Composition I | 3 |
| MTH | 500 | Technical Mathematics II | 3 |
| | | | 17 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| FLR | 121 | Greenhouse Crop Production I | 3 |
| FLR | 122 | Floral Design I | 3 |
| CHM | 100 | Fundamentals of Chemistry | |
| | | or | 4 |
| CHM | 105 | General Organic Chemistry | |
| ENL | 121 | English Composition II | 3 |
| PED | | Physical Education | 1 |
| | | | 14 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| FLR | 232 | Greenhouse Crop Production II | 3 |
| FLR | 233 | Floral Design II | 3 |
| OHT | 234 | Plant Propagation | 3 |
| OHT | 239 | Plant Insects and Diseases | 3 |
| PED | | Physical Education | 1 |
| | | Elective-General* | 3/4 |
| | | | 16/17 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| FLR | 243 | Greenhouse Crop Production III | 3 |
| FLR | 244 | Flower Shop Operation | 3 |
| FLR | 245 | House & Conservatory Plants | 3 |
| OHT | 246 | Horticulture Mechanics | 3 |
| | | Elective-General* | 3/4 |
| | | | 15/16 |

PROGRAM OBJECTIVES

The goal of the Floriculture program is to prepare the student to obtain employment, or to be self-employed in the retail florist and greenhouse industry or related businesses.

A graduate of Floriculture should be able to:

1. interpret basic knowledge of botany, chemistry, and horticulture soils as they relate to plant growth and culture.
2. identify the communication skills necessary to organize thoughts and ideas and demonstrate the ability to communicate, orally and in writing, in a manner that can be easily understood.
3. solve mathematical problems relating to the use of soil amendments, fertilizers, and plant growth control chemicals, and demonstrate proper cost estimating, pricing, and record keeping.
4. identify common trees, shrubs, ground covers, and various annuals, biennials, and perennials by botanical and common names, and describe the outstanding characteristics of each; summarize landscape, garden center, and greenhouse use and cultural requirements of these species.
5. select the proper procedures, define the physiological basis, and describe practical applications of the reproduction of plants by asexual and sexual methods.
6. describe proper design and operation of greenhouse environmental systems, and appraise their advantages and disadvantages for commercial production.
7. summarize and assess cultural requirements for commercial production of greenhouse crops, and economically produce a crop from seed or cutting to harvest and sales.
8. prepare salable floral designs of fresh, dried, and artificial flowers using design guidelines and within time and price requirements of the retail florist industry.
9. outline the management requirements of a flower shop, including record keeping and employee/employer relations, and demonstrate proper construction, selling, and servicing of arrangements and accessories for special occasions.
10. identify and describe the effect of insects, disease, and physiological problems on plants, plan for proper control of these problems, and obtain the Pennsylvania Private Applicator's License.
11. demonstrate an understanding of the operation and repair of equipment and mechanical systems utilized in the floriculture industry.
12. demonstrate a responsible attitude in personal relationships with employers, fellow employees, and the world of work.
13. identify foliage plants commonly used indoors by botanical and common names, state distinguishing characteristics of each, and describe their use and culture in various indoor landscape areas.
14. demonstrate an appreciation of physical fitness and lifelong recreational activities.

## Food and Hospitality Management (FH) Associate Degree/Two Years

This program includes academic classroom study as well as practical laboratory work in the areas of business and personnel management, food preparation and supervision, and related subjects. Guest speakers, field trips, and directed community field work experiences enlarge student opportunities for learning.

**Types of Jobs:** Food service supervisory positions in restaurants, clubs, hospitals, nursing homes, child care centers, schools, and colleges; front office or housekeeping manager in hotels and motels.
*GENERAL ELECTIVES are courses chosen from outside your program of concentration.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| FHD | 111 | Introductory Foods | 3 |
| FHD | 112 | Nutrition | 3 |
| FHD | 115 | Purchasing, Storage, and Sanitation | 3 |
| MGT | 247 | Small Business Management | 3 |
| ENL | 111 | English Composition I | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| FHD | 121 | Quantity Food Preparation | 3 |
| FHD | 125 | Menu Planning and Cost Control | 3 |
| FHD | 246 | Hospitality Merchandising | 3 |
| ENL | 121 | English Composition II | |
| | | or | 3 |
| ENL | 201 | Technical Writing | |
| PED | | Physical Education | 1 |
| | | General Elective* | 3 |
| | | | 16 |

PRACTICUM—SUMMER TERM

| | | | Credits |
|---|---|---|---|
| FHD | 250 | Hospitality, Dietetic Work Experience (Management Systems III) | 1 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| FHD | 235 | Personnel Management, Work Simplification | 3 |
| FHD | 236 | Hospitality Management and Theory | 2 |
| ACC | 121 | Elementary Accounting | 3 |
| PSY | 111 | General Psychology | 3 |
| BIO | 110 | Human Physiology | |
| | | or | 3 |
| | | Science Elective | |
| | | | 14 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| FHD | 126 | Front Office Management and Housekeeping** | 3 |
| FHD | 241 | Beverage Management and Catering | 3 |
| FHD | 245 | Equipment and Layouts | 3 |
| MGT | 230 | Business Communication | 3 |
| | | General Elective* | 3 |
| | | | 15 |

**Students may take FHD 122, Diet Therapy, or FHD 201, Advanced Quantity Foods, in place of FHD 126, Front Office Management and Housekeeping.

PROGRAM OBJECTIVES

The general objective of the Food and Hospitality Management program is to prepare students for employment in food service management positions in restaurants, schools, institutions, and catering operations. Options within the program allow students to prepare for employment in front office and housekeeping positions in hotels and motels or to qualify to continue their education toward a baccalaureate degree.

Upon completion of the program, the student should be able to:

1. demonstrate proper techniques of food preparation and food handling sanitation.
2. plan and carry out the management of work schedules, job descriptions, menu planning, purchasing, portion control, and dining room and cafeteria service.
3. describe the equipment available on the market and plan arrangement, operation, and maintenance for efficiency and safety.
4. demonstrate creative, thorough thinking in solving management problems and in merchandising techniques.
5. display knowledge and practice of professional appearance, attitude, and standards.
6. describe the physiological effects of food in the human body.
7. show signs of developing a sense of worth and responsibility, not only in the food service business, but in the community.
8. communicate clearly, both orally and in writing.
9. demonstrate the ability to keep accurate food business records and have a proper perspective on the relation between financial profits and good business ethics.
10. plan and carry out catered events and apply knowledge of all types of beverages.
11. demonstrate working knowledge of establishing and operating a small business in the United States.
12. demonstrate working knowledge of front office practice and housekeeping procedures (students who select the lodging option).
13. apply knowledge of physical activities and sports for the maintenance of good health.

## Forest Technology (FR)
## Associate Degree/Two Years

This program includes basic forestry techniques, activities and field work. It provides sufficient general academic courses and specialized forestry courses to prepare the student to occupy a responsible position between the skilled forest worker and the professional forester.

**Types of Jobs:** In public agencies – Forest fire control; wildlife habitat improvement; maintenance of forest roads, structures, and recreation areas; timber estimation; timber marking; stand improvement.
In private employment – Pulpwood procurement; timber estimating; planning and construction of forest roads; supervision of logging operations; location and survey of forest property lines.
**Recommended High School Subjects:** Two years of algebra, one year of science.
*GENERAL ELECTIVES are courses chosen from outside your program of concentration.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| FOR | 111 | Dendrology | 3 |
| FOR | 113 | Forest Mensuration | 3 |
| FOR | 115 | Forest Botany | 3 |
| ENL | 111 | English Composition I | 3 |
| MTH | 103 | College Algebra | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| FOR | 121 | Photogrammetry & Forest Surveying I | 3 |
| FOR | 124 | Advanced Forest Mensuration | 3 |
| FOR | 126 | Forest Ecology/Wildlife Management | 3 |
| ENL | 121 | English Composition II | 3 |
| MTH | 104 | College Trigonometry | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| FOR | 232 | Forest Surveying II | 3 |
| FOR | 233 | Equipment and Machinery | 3 |
| FOR | 234 | Timber Harvesting | 3 |
| FOR | 236 | Silviculture | 3 |
| MGT | 110 | Principles of Business | 3 |
| | | | 15 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| FOR | 242 | Forest Products | 3 |
| FOR | 247 | Forest Land Management & Recreation | 3 |
| FOR | 248 | Forest Protection | 3 |
| ECO | 201 | Principles of Economics | 3 |
| | | Elective-General* | 3/4 |
| | | | 15/16 |

### PROGRAM OBJECTIVES

The general objective of the Forest Technology program is to prepare the student to obtain employment as a forest technician in public and private sectors of forestry and related fields.

The graduate of the Forest Technology program should be able to:

1. write accurate technical reports using proper language structure and demonstrate skill in basic oral communication.
2. identify selected species of trees and shrubs by their scientific and common names, general uses, site associations and general distribution.
3. demonstrate the fundamentals of plane surveying, including the use and care of equipment, maps and map making, and the theory of measurements.
4. measure the volume of standing timber and volume of products removed from the forest.
5. prepare a forest land management plan for given property using the concepts of multiple use and sustained yield forest management.
6. demonstrate proficiency in understanding the silvicultural treatments used to regulate stand composition, regenerate stands, increase growth rates and improve timber quality.
7. demonstrate the basic theories, principles, and techniques employed in timber harvesting and demonstrate proficiency in the operation and maintenance of the tools and equipment used to harvest a forest crop.
8. analyze the interrelationships among humans, other organisms, and the forest environment.
9. describe the life history, food requirements, and distribution of the major game and non-game birds and mammals of Pennsylvania.
10. identify and describe the function of tree parts and related plants and describe their relationship to soil.
11. describe the processing operations, properties, and uses of various forest products and identify and describe the properties and structure of wood.
12. describe the characteristics and control of various forest pests, diseases, and fire problems.
13. utilize the appropriate mathematical skills and competencies to solve applied problems in the field of forestry.
14. develop fundamental skills in lifetime sports.
15. demonstrate an attitude of responsibility required for successful relationships with employers, fellow employees, and the world of work.

## Graphic Arts (GA)
## Associate Degree/Two Years

This program provides a firm understanding of highly diversified backshop operations along with management, marketing, and supervisory training. Practical laboratory work with modern graphic arts equipment gives a background in areas of composition, makeup, photo process, imposition and stripping, platemaking, presswork, and bindery.

**Types of Jobs:** Graphic arts executive training, in-plant supervisors, self-employed printer, marketing and technical sales service.
**Recommended High School Subjects:** Two years of algebra, one year of science.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| GCO | 511 | Layout and Design | 4 |
| GCO | 512 | Typographic Composition | 4 |
| ENL | 111 | English Composition I | 3 |
| SEC | 709 | Typewriting | 1 |
| MTH | | Math Elective* | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| GCO | 521 | Process Camera | 4 |
| GCO | 522 | Film Assembly & Imposition | 4 |
| ENL | 121 | English Composition II | |
| | | or | 3 |
| ENL | 201 | Technical Writing | |
| MGT | 247 | Small Business Management | 3 |
| PED | | Physical Education | 1 |
| | | | 15 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| GCO | 631 | Platemaking, Substrates & Finishing | 4 |
| GCO | 632 | Press Operations | 4 |
| GCO | 635 | Printing Estimating Practices | 3 |
| CHM | 299 | Chemistry of Lithography | 3 |
| | | Elective | 3 |
| | | | 17 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| GCO | 641 | Advanced Typographic Composition | 3 |
| GCO | 642 | Advanced Process Camera and Stripping | 3 |
| GCO | 645 | Printing Processes | 3 |
| CSC | 118 | Fundamentals of Computer Science | 3 |
| | | Elective | 3 |
| | | | 15 |

*MTH 101 Introduction to Mathematics, MTH 102 Introduction to Mathematics II, MTH 103 College Algebra, MTH 104 College Trigonometry

### PROGRAM OBJECTIVES

The general objective of this program is to provide a firm understanding of highly diversified backshop operations and to prepare the graduate for employment. Related courses and electives are included to increase opportunities for advancement and enable the graduate to qualify for continuing education toward a baccalaureate degree.

A graduate of the Graphic Arts program should be able to:

1. recognize the major printing processes, their respective products, and the relative merits of each process.
2. perform in the areas of layout and design, copy preparation and composition, continuous tone and reproduction photography, stripping, platemaking, presswork and finishing with a level of proficiency suitable for job entry as an advanced learner.
3. relate technical knowledge to the areas listed above in order to make rational decisions.
4. appraise his/her abilities and limitations in the various areas comprising graphic arts.
5. demonstrate the personal traits of promptness, willingness to work, and the ability to accept supervision.
6. demonstrate respect for equipment and use appropriate safety precautions when working around such equipment.
7. compare production departments and the contributions each makes to the total product.
8. identify the problems of owning and operating a business.
9. describe basic chemistry principles and apply them to graphic arts.
10. solve basic mathematical problems related to graphic arts.
11. write clear, concise, legible, and accurate technical reports using proper language structure.
12. demonstrate skill in basic oral communication and ability to speak logically using various types of oral communication techniques.
13. demonstrate knowledge of the rules and techniques of a life-time sport which will provide recreation and promote physical fitness.

## Journalism (JO)
## Associate Degree/Two Years

Practical courses in news and feature story writing, news photography, editing, copy writing, and community responsibility are taught. Background courses in government, economics, sociology, and psychology are included in the program.

**Types of Jobs:** Newspaper reporter, advertising copywriter, public relations assistant, news photographer, magazine research assistant.
*GENERAL ELECTIVES are courses chosen from outside your program of concentration.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| JOU | 111 | News Writing | 3 |
| JOU | 113 | Principles of News Photography | 3 |
| ENL | 111 | English Composition I | 3 |
| GOV | 231 | American Government - National | 3 |
| SEC | 111 | Typewriting I | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| JOU | 121 | Reporting Public Affairs | 3 |
| JOU | 122 | Introductory Newspaper Production | 2 |
| ENL | 202 | Fundamentals of Speech | 3 |
| GOV | 241 | State and Local Government | 3 |
| SOC | 111 | Introduction to Sociology | 3 |
| PED | | Physical Education | 1 |
| | | | 15 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| JOU | 231 | Feature Writing | 3 |
| JOU | 232 | Copyreading and Editing | 3 |
| JOU | 233 | Newspaper Management and Production | 2 |
| ECO | 201 | Principles of Economics | 3 |
| | | Elective-General* | 3/4 |
| | | | 14/15 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| JOU | 241 | Newspaper Organization and Community Responsibility | 3 |
| JOU | 242 | Internship | 2 |
| ADV | 101 | Principles of Advertising | 3 |
| ESC | 100 | Environmental Science | 3 |
| PSY | 111 | General Psychology | 3 |
| | | Elective-General* | 3/4 |
| | | | 17/18 |

PROGRAM OBJECTIVES

The general objective of the Journalism program is to prepare students for employment in the journalism field in the small or middle size operation.

Graduates of the Journalism program will be able to:

1. state their importance as individual citizens, in the broad sense, in a community as well as their unique importance as trained media persons with the possibility of influencing the lives of others in the community.
2. state the responsibilities of the media in America, as well as state their responsibilities as individuals with specialized media training to their community.
3. use modern mass media copy production systems, such as the video display terminals.
4. state ethical and legislative laws which govern the production of mass media and correlate personal responsibility to those laws.
5. state philosophical and practical standards and goals of various forms of mass media.
6. list interrelationships of mass media with various kinds of communities; i.e., geographical, company, etc.
7. interview, research, and correlate material necessary for writing feature and/or in-depth articles for publication.
8. produce public relations material including articles and basic photographic assignments.
9. state relationship of photographs with news, advertising, and public relations material as well as produce basic photographic assignments.
10. list differences in types of writing for various forms of mass media including newspapers, magazines, trade journals, house organs, etc.
11. delineate the roles of individuals on staffs of publications.
12. explain the relationship of publications and publication budgets as pertains to operation of a business.
13. differentiate between objective, non-objective, biased, persuasive, and other forms of writing for mass media.
14. coordinate and implement organization and production of club bulletins, house organs and similar small publications.
15. assist in production of advertising copy and layout for small publications or small advertising agency.
16. demonstrate knowledge of a lifetime sport which will provide recreation and promote physical fitness.

## Machine Tool Technology (TT)
## Associate Degree/Two Years

This program prepares the student to work with the engineer and shop superintendent. Laboratory and shop work provide training in machine operation and theory, blueprint reading, and mechanical drawing. Routing of jobs and the sequence of operations, as well as related courses in mathematics, science and economics are included to increase the student's advancement opportunities.

**Types of Jobs:** Toolmaker; experimental, numerical controller; production technician; administrative assistant.
**Recommended High School Subjects:** Two years of algebra, one year of science.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| MTT | 511 | Machining I | 5 |
| MTT | 512 | Machining II | 5 |
| ENL | 111 | English Composition I | 3 |
| MTH | 103 | College Algebra | 3 |
| PED | | Physical Education | 1 |
| | | | 17 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| MTT | 521 | Automatic Machines | 5 |
| MTT | 522 | Industrial Metrology | 5 |
| ENL | 121 | English Composition II | 3 |
| MTH | 104 | College Trigonometry | 3 |
| | | | 16 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| MTT | 631 | Tooling Technology I | 5 |
| MTT | 632 | Tooling Technology II | 5 |
| PHS | 100 | Physics-Mechanics | 4 |
| EDT | 101 | Mechanical Drawing | 2 |
| | | | 16 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| MTT | 641 | Abrasive Machining | 5 |
| MTT | 642 | Heat Treatment and Cutter Grinding | 5 |
| PHS | 106 | Introduction to Metallurgy | 4 |
| PED | | Physical Education | 1 |
| | | | 15 |

PROGRAM OBJECTIVES

The overall objective is to prepare students for employment positions in the machine tool industry.

A graduate of the Machine Tool Technology program should be able to:

1. demonstrate safe working habits and a safe working attitude toward machinery and the machining field.
2. read blueprints, interpret drawings, understand specifications, and establish tolerances.
3. apply mathematics as it relates to the machine tool trade (speeds, feeds, thread measurement, sinebar, etc.).
4. apply the principles of physics and metallurgy to the science of heat treatment operations including:
   a. hardening of steel
   b. carburizing
   c. case hardening
   d. tempering
   e. annealing
5. operate basic machine tools and demonstrate knowledge of their construction as related to the metal industry.
6. describe the construction and operation of production machinery, including turret lathes, screw machines, automatic tappers, etc.
7. demonstrate skills on numerical control machine, electrical discharge machine, electrical chemical grinder, digital readout, diemaking, jig grinding, jigs and fixtures.
8. operate abrasive cutting machinery and select and plan machining operations on this equipment.
9. practice quality control, inspection, gaging methods, production control as related to the design functions and production of manufacturing.
10. demonstrate basic oral communication skills, speak logically, and use various types of oral and written communication techniques to promote good business contact, to develop leadership, and to establish good employer-employee-customer relationships.
11. demonstrate knowledge of a lifetime sport which will provide recreation and promote physical fitness.

## Machinist General (MG) Certificate/Two Years

This program offers training on machine tools that are common to most shops and emphasizes skill with machines. Classroom analysis of various jobs and machine operations increases the student's capabilities as a machinist. General mathematics, science, and communications skills are included to help meet the demands of modern technical developments.

**Types of Jobs:** Machinist, machine repair mechanic, setup person for production line work, skilled toolroom mechanic.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| MTT | 511 | Machining I | 5 |
| MTT | 512 | Machining II | 5 |
| MTH | 710 | Technical Math I | 3 |
| | | | 13 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| MTT | 521 | Automatic Machines | 5 |
| MTT | 522 | Industrial Metrology | 5 |
| MTH | 500 | Technical Math II | 3 |
| | | | 13 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| MTT | 631 | Tooling Technology I | 5 |
| MTT | 632 | Tooling Technology II | 5 |
| PHS | 500 | Physics Survey | 3 |
| ENL | 711 | Communications | 3 |
| | | | 16 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| MTT | 641 | Abrasive Machining | 5 |
| MTT | 642 | Heat Treatment and Cutter Grinding | 5 |
| EDT | 101 | Mechanical Drawing | 2 |
| | | | 12 |

PROGRAM OBJECTIVES

The overall objective of this program is to prepare students for employment positions in the machining industry.

A graduate of the Machinist General program should be able to:

1. demonstrate safe working habits and a safety consciousness toward the operation of machine tools and equipment.
2. demonstrate working knowledge of blueprint reading and work from sketches of parts.
3. develop and use mathematical formula to compute coordinates and solve gearing and threading problems.
4. translate and apply basic knowledge of physics-mechanics to machine tool problems such as power transmission, machining, etc.
5. operate and set up basic machine tools.
6. operate machine tools to produce gears, threads, and gages.
7. operate and set up numerically controlled machines, electrical discharge, and electrical chemical machines.
8. operate various types of abrasive cutting machines, and practice heat treating of metals, such as hardening, annealing, and carburizing.
9. prepare and revise technical papers for shop use in the operation of machine tools and machining procedure.

## Marketing/Merchandising (MM)
## Associate Degree/Two Years

This program provides a strong background in the field of marketing, merchandising, retailing, and related business fields.

**Types of Jobs:** Retailers, buyers, wholesalers, purchasing agents, sales managers, salespersons, salesworkers, marketing managers, distribution managers.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| ACC | 112 | Accounting I | 3 |
| MGT | 110 | Principles of Business | 3 |
| MGT | 111 | Business Mathematics | 3 |
| SEC | 111 | Typewriting I | 3 |
| ENL | 111 | English Composition I | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| MKT | 234 | Retail Merchandising I | 3 |
| MKT | 243 | Sales | 3 |
| ACC | 122 | Accounting II | 3 |
| MGT | 124 | Office Procedures | 2 |
| MGT | 230 | Business Communications | 3 |
| MGT | 231 | Business Law I | 3 |
| PED | | Physical Education | 1 |
| | | | 18 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| MKT | 244 | Retail Merchandising II | 3 |
| CSC | 118 | Fundamentals of Computer Science | 3 |
| ECO | 201 | Principles of Economics | 3 |
| ENL | 202 | Fundamentals of Speech | 3 |
| | | Elective-Social Science | 3 |
| | | | 15 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| MKT | 240 | Marketing | 3 |
| MKT | 246 | Fashion Merchandising | 3 |
| ADV | 101 | Principles of Advertising | 3 |
| MGT | 248 | Supervision & Human Relations | 3 |
| | | Elective | 3 |
| | | | 15 |

PROGRAM OBJECTIVES

The general goal of the Marketing/Merchandising program is to prepare the graduate to obtain employment in middle management in the private sector of the retail and/or wholesale field. Alternatives may be to pursue advanced study or to add to the competencies of those currently employed in the field.

The graduate should be able to:

1. review and appraise the administrative processes and policies for marketing and retail merchandising.
2. evaluate customer behavior and motivation as it applies to a profitable enterprise.
3. compose advertising campaigns using the media that is most effective in terms of cost, consumer appeal, and desired results.
4. distinguish the steps involved in identifying and segmenting a market.
5. relate in a positive manner to supervisors, peers, and subordinates on an interpersonal level.
6. demonstrate skill in effective oral and written communications.
7. apply analytical techniques in the preparation of financial statements and inventory systems.
8. demonstrate general knowledge of electronic data processing and point of sale equipment.
9. identify the legal aspects affecting business.
10. identify the need for physical fitness and positive leisure activities.

## Mechanical Drafting (MD) Certificate/Two Years

This program emphasizes drafting skills which will enable the student to produce drawings for modern industry. The student will learn the latest industrial processes to improve and enhance his/her drawings and insure efficiency.

**Types of Jobs:** Mechanical, sheet metal, piping, or electrical drafting; related jobs such as estimator or field erection supervisor.

FIRST SEMESTER

| | | Credits |
|---|---|---|
| MDT 711 | Drafting Techniques I (8 weeks) | 5 |
| MDT 712 | Drafting Techniques II (8 weeks) | 5 |
| ENL 711 | Communications | 3 |
| MTH 710 | Technical Mathematics I | 3 |
| | | 16 |

SECOND SEMESTER

| | | Credits |
|---|---|---|
| MDT 721 | Applied Drafting I (8 weeks) | 5 |
| MDT 722 | Applied Drafting II (8 weeks) | 5 |
| EDT 106 | Industrial Processes | 2 |
| MTH 500 | Technical Mathematics II | 3 |
| | | 15 |

THIRD SEMESTER

| | | Credits |
|---|---|---|
| MDT 831 | Applied Drafting III (8 weeks) | 5 |
| MDT 832 | Applied Drafting IV (8 weeks) | 5 |
| PHS 500 | Physics Survey | 3 |
| | | 13 |

FOURTH SEMESTER

| | | Credits |
|---|---|---|
| MDT 841 | Applied Drafting V (8 weeks) | 5 |
| MDT 842 | Applied Drafting VI (8 weeks) | 5 |
| | Elective | 3 |
| | | 13 |

PROGRAM OBJECTIVES

The general objective of this program is to prepare the student to obtain employment as a mechanical draftsperson.

A graduate of the Mechanical Drafting program should be able to:

1. describe an object using geometric construction and orthographic projection techniques.
2. draw and letter skillfully.
3. select the proper symbols necessary to represent commonly used drafting standards.
4. illustrate on a drawing the means used to transmit power mechanically, and describe the motions of a given design.
5. create from layout drawings the kinds of sub-drawings necessary for manufacturing, assembly, and installation information.
6. make a drawing in keeping with industrial process limitations.
7. incorporate in the dimensions the limitations necessary to guide the manufacturing processes based on the accuracy and quality of those processes.
8. apply engineering data to the drawings using mathematical calculations and basic laws of physics.
9. write accurate technical reports using standard English.
10. demonstrate an attitude of responsibility toward the tasks involved in mechanical drafting and a cooperative spirit toward each person associated with this work.

## Nursery Management (NM)
## Ornamental Horticulture Technology (OH)
## Associate Degree/Two Years

This program prepares the student to propagate, grow to a commercial size and profitably sell the many species and varieties of woody plants. It also covers the identification of commercially important plants and the design, construction and maintenance of landscape plans and features.

**Types of Jobs:** Propagation and production of trees and shrubs in field or container nurseries; nursery stock buyer; agent or salesperson; retail (garden center) sales; horticulturist with a government agency (city, state, federal), landscaping, or your own business.
*GENERAL ELECTIVES are courses chosen from outside your program of concentration.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| OHT | 114 | Horticulture Soils | 3 |
| OHT | 115 | Woody Plants I | 2 |
| OHT | 116 | Herbaceous Plants | 3 |
| BIO | 111 | Basic Botany | 3 |
| ENL | 111 | English Composition I | 3 |
| MTH | 500 | Technical Mathematics II | 3 |
| | | | 17 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| NMG | 121 | Nursery Production I | 3 |
| NMG | 126 | Woody Plants II | 3 |
| CHM | 100 | Fundamentals of Chemistry | |
| | | or | 4 |
| CHM | 105 | General Organic Chemistry | |
| ENL | 121 | English Composition II | 3 |
| PED | | Physical Education | 1 |
| | | | 14 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| NMG | 232 | Nursery Production II | 3 |
| NMG | 237 | Woody Plants III | 3 |
| OHT | 234 | Plant Propagation | 3 |
| OHT | 239 | Plant Insects and Diseases | 3 |
| PED | | Physical Education | 1 |
| | | Elective-General* | 3/4 |
| | | | 16/17 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| NMG | 245 | Landscape Construction | 3 |
| NMG | 248 | Landscape Maintenance | 3 |
| NMG | 249 | Landscape Design | 3 |
| OHT | 246 | Horticulture Mechanics | 3 |
| | | Elective-General* | 3/4 |
| | | | 15/16 |

PROGRAM OBJECTIVES

The goal of the Nursery Management program is to prepare the student to obtain employment, or to be self-employed, in the areas of growing nursery crops, retail and garden center sales, landscape fields or related businesses.

A graduate of Nursery Management should be able to:

1. interpret basic knowledge of botany, chemistry, and horticulture soils as they relate to plant growth and culture.
2. identify the communication skills necessary to organize thoughts and ideas and communicate, orally and in writing, in a manner that can be easily understood.
3. solve mathematics problems relating to the use of soil amendments, fertilizers, and plant growth control chemicals, and demonstrate proper cost estimating, pricing, and record keeping.
4. identify deciduous trees and shrubs, narrow and broad-leaved evergreens, cultivars, and varieties by botanical and common name and point out their distinguishing characteristics, landscape uses and applications.
5. identify various annuals, biennials, and perennial herbaceous plants, and summarize landscape, garden center, and greenhouse use and cultural requirements of these plants.
6. describe the various types of nurseries, nursery growing structures, related facilities, equipment, and handtools and define proper location and design factors of nursery facilities.
7. demonstrate the commercial growing of plants in field and container operations on a scheduled production basis.
8. identify and describe the effect of insects, diseases, and physiological problems on plants, plan for proper control of these problems, and obtain the Pennsylvania Private Applicator's License.
9. select the proper procedures, define the physiological basis, and describe practical applications of the reproduction of plants by sexual and asexual methods.
10. demonstrate the proper and effective use of woody and herbaceous plant materials in developing public and domestic landscape areas.
11. prepare landscape construction features such as waterfalls, pools, steps, walks, walls, and patios using materials such as flagstone, brick, railroad ties, mountain stone, and epoxy stone.
12. identify and use procedures such as pruning, fertilizing, and spraying in the maintenance of existing landscapes.
13. demonstrate an understanding of the operation and repair of equipment and mechanical systems utilized in the nursery industry.
14. demonstrate a responsible attitude in personal relationships with employers, fellow employees, and the world of work.
15. demonstrate an appreciation of physical fitness and lifelong recreational activities.

## Operating Room Technician (OT) (Surgical Technology) Certificate/One Year

Completion of this program enables the student to function under the direction of a Registered Nurse as a scrub or circulating technician on the operating room team during operations and includes the care, preparation, and maintenance of all sterile and unsterile supplies and equipment used in the operating room. See page 5 for special admission requirements for this program.

**Types of Jobs:** Member of surgical team in hospital operating rooms and central service departments or other areas closely concerned with the principles and practice of surgical asepsis.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| ORT | 710 | Body Structure and Function | 5 |
| ORT | 711 | Operating Room Techniques I | 13 |
| | | | 18 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| ORT | 720 | Operating Room Techniques II | 4 |
| ORT | 721 | Supervised Clinical Experience | 10 |
| | | Optional Elective | 0/3 |
| | | | 14/17 |

PROGRAM OBJECTIVES

The general program objective is to provide students with the academic and practical training to enable graduates to function as skilled technicians in a hospital operating room or central services department.

The Operating Room Technician graduate should be able to:

1. utilize background knowledge in the basic sciences, surgical anatomy, and aseptic technique, and demonstrate their application to surgery.
2. describe operating room technique and its relationship to good patient care in order to perform tasks as delegated and supervised by professional nursing personnel.
3. practice good personal hygiene and state its relationship to reducing the incidence of infection.
4. describe the relationship between the operating room and other departments of the hospital.
5. identify the need for adhering to hospital policies, and ethics, and medical, moral, and legal codes.
6. describe the essential nature of honesty in developing a rigid aseptic conscience, its application to the operating room and its relationship to an uncomplicated post-operative recovery for the patient.
7. adapt aseptic principles when encountering the unexpected emergency situation.
8. demonstrate knowledge and understanding of the demands of all surgical procedures in order to function as a member of the surgical team, giving appropriate service to the surgeon and thereby meeting the needs of the patient.
9. identify and describe the cost, preparation, use, care and after-care of equipment, instruments and supplies, and their importance to the safe and expeditious performance of surgical procedures.
10. demonstrate an awareness of the responsibilities and limitations of the role of the operating room technician, and be able to function within these limits.
11. state the extent of liability of operating room technicians and the importance of proper, adequate, direct supervision.
12. describe the organization of the hospital, the physical plant, and personnel requirements, practices, and policies.
13. practice economy of time, motion, and material as well as demonstrate accuracy, speed, emotional stability, and physical stamina.
14. demonstrate adequate consideration of the physical, spiritual, and emotional needs of the patient.

## Plumbing and Heating (PL)
## Certificate/Two Years

The student is taught the basic theories of plumbing and heating, soil waste and vent layout, household and industrial maintenance, sewage systems, and the use of hand and power tools. The fundamentals of communications and mathematics are also covered. Training is provided in all types of plumbing and heating repair work used in residential, institutional, and commercial applications.

**Types of Jobs:** Plumbing and heating installation, industrial maintenance, public utilities service, machine work and shipbuilding industries.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| PLH | 711 | Plumbing and Heating I (8 weeks) | 6 |
| PLH | 712 | Plumbing and Heating II (8 weeks) | 6 |
| MTH | 710 | Technical Mathematics I | 3 |
| | | | 15 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| PLH | 721 | Plumbing and Heating III (8 weeks) | 6 |
| PLH | 722 | Plumbing and Heating IV (8 weeks) | 6 |
| WEL | 703 | Electric Welding | 2 |
| ENL | 711 | Communications | 3 |
| | | | 17 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| PLH | 831 | Plumbing and Heating V (8 weeks) | 6 |
| PLH | 832 | Plumbing and Heating VI (8 weeks) | 6 |
| ELT | 110 | Electricity for the Trades | 3 |
| | | Optional Elective | 0/3 |
| | | | 15/18 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| PLH | 841 | Plumbing and Heating VII (8 weeks) | 6 |
| PLH | 842 | Plumbing and Heating VIII (8 weeks) | 6 |
| | | Optional Elective | 0/3 |
| | | | 12/15 |

PROGRAM OBJECTIVES

The goal of the Plumbing and Heating program is to develop marketable entry-level skills for employment in the field of plumbing and heating.

A graduate of the Plumbing and Heating program should be able to:

1. apply knowledge of safety and demonstrate good work habits in the trade.
2. use hand and power tools of the trade.
3. identify piping materials and install them using proper connections.
4. use and apply trade terms and technical data.
5. read and interpret blueprints, specifications, and codes as they apply to the trade.
6. lay out, estimate, calculate, and use mathematical skills as required in the trade.
7. install, maintain, and repair plumbing and heating mechanical systems and equipment and keep abreast of new developments in the field.
8. demonstrate the capability to write letters of application, memos, work orders, and reports, and apply communication skills in the world of work.
9. perform necessary welding functions as related to the plumbing and heating trade.
10. apply basic knowledge and skills of electrical work to adequately install, repair, maintain, and troubleshoot electrical controls as related to plumbing and heating.

## Practical Nursing (NU)
## Certificate/Fifty-Two Weeks

Classroom instruction in theory and basic skills is given on the WACC campus. Practical experience in actual patient care settings is obtained at the two local hospitals (Williamsport Hospital and Divine Providence Hospital) and at the Lysock View Home and Hospital. Under the guidance of college instructors at the cooperating institutions, students gain experience in the care of adult patients and in maternal and child health nursing. Mental health concepts, pharmacology, and diet therapy are integrated throughout the program. See page 5 for special admission requirements for this program.

**Types of Jobs:** Employment in hospitals, convalescent homes, visiting nurses association, doctor's office, private duty.

FIRST SEMESTER-16 Weeks of 33 Hours Each

| | | Credits |
|---|---|---|
| NUR 710 | Foundations of Nursing | 12 |
| NUR 711 | Nursing Relationships | 3 |
| NUR 712 | Scientific Principles Relating to Nursing | 6 |
| | | 21 |

SECOND SEMESTER-15 Weeks of 30 Hours Each

| | | Credits |
|---|---|---|
| NUR 723 | Medical-Surgical Nursing—Elementary* | 9 |
| NUR 724 | Parental and Child Health** | 9 |
| | | 18 |

THIRD SEMESTER-15 Weeks of 30 Hours Each

| | | Credits |
|---|---|---|
| NUR 735 | Medical-Surgical Nursing—Intermediate | 18 |
| | | 18 |

PRACTICUM-3 Weeks of 25 Hours Each

| | | |
|---|---|---|
| NUR 736 | Practicum | 2 |
| | | 2 |

Theory—600 Hours 2/5 Ratio
Practicum—903 Hours 3/5 Ratio
Total—1,503 Hours

VACATION-3 Weeks

*NUR 723-15 wks lecture/7 wks lab
**NUR 724-15 wks lecture/8 wks lab

PROGRAM OBJECTIVES

A graduate of The Williamsport Area Community College Practical Nursing program will be able to share in the care of the sick, in rehabilitation, and in the prevention of illness, always under the direction of a licensed physician and/or registered professional nurse. The program also provides the academic and practical educational experiences which enable graduates to pass a state board examination and thereby obtain a license.

At the completion of the Practical Nursing program, the graduate should be able to:

1. utilize, under supervision, scientific knowledge and skills necessary to plan and provide safe and comprehensive client-centered nursing care of the subacutely and chronically ill of all ages.
2. perform nursing care that reflects accurate assessments of the client's growth and development.
3. utilize the problem-solving approach in administering nursing care.
4. utilize effective communication skills.
5. assist the professional and technical nurse in the care of the acutely ill patient.
6. demonstrate knowledge of community health agencies in meeting health needs of society.
7. demonstrate an acceptable code of ethical behavior according to standards set by health care delivery agencies.

## Printing (GP)
## Certificate/Two Years

This program examines the many complex operations and occupations involved in modern printing. All printing operations are covered to insure versatility in the field.

**Types of Jobs**: Camera work, stripper, layout work, compositor, platemaker, and press work.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| GCO | 511 | Layout and Design | 4 |
| GCO | 512 | Typographic Composition | 4 |
| ENL | 711 | Communications | 3 |
| MTH | 710 | Technical Mathematics I | 3 |
| SEC | 709 | Typewriting | 1 |
| | | | 15 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| GCO | 521 | Process Camera | 4 |
| GCO | 522 | Film Assembly and Imposition | 4 |
| MGT | 247 | Small Business Management | 3 |
| MTH | 500 | Technical Mathematics II | 3 |
| | | Elective | 3 |
| | | | 17 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| GCO | 631 | Platemaking, Substrates & Finishing | 4 |
| GCO | 632 | Press Operations | 4 |
| GCO | 635 | Printing Estimating Practices | 3 |
| CHM | 299 | Chemistry of Lithography | 3 |
| | | Elective | 3 |
| | | | 17 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| GCO | 641 | Advanced Typographic Composition | 3 |
| GCO | 642 | Advanced Process Camera and Stripping | 3 |
| GCO | 645 | Printing Processes | 3 |
| CSC | 118 | Fundamentals of Computer Science | 3 |
| | | | 12 |

PROGRAM OBJECTIVES

The general objective of the Printing program is to prepare students for employment in the printing field in large and small operations.

A graduate of the Printing program should be able to:

1. recognize the major printing processes, their respective products, and the relative merits of each process.
2. perform in the areas of layout and design, copy preparation and composition, continuous tone and reproduction photography, stripping, platemaking, presswork, estimating and finishing with a level of proficiency suitable for job entry as an advanced learner.
3. appraise his/her abilities and limitations in the various areas comprising graphic arts.
4. demonstrate the personal traits of promptness, willingness to work, and the ability to accept supervision.
5. demonstrate respect for equipment and use appropriate safety precautions when working around such equipment.
6. compare production departments and the contributions each makes to the total product.
7. write clear, concise, legible, and accurate technical reports using proper language structure.
8. demonstrate skill in basic oral communications.
9. solve basic mathematical problems related to printing operations.

## Radiologic Technology (RT)
## Associate Degree/Two Years

This program includes courses in anatomy, physiology, physics, medical terminology, professional ethics, and radiologic equipment and safety as well as English and mathematics. Practical experience with sick and injured patients, under qualified technical supervision in local affiliated hospitals, will be an important aspect of training. Students are exempt from the Physical Education Program. Internships are required to establish eligibility for the registry examinations necessary to qualify as a registered radiologic technologist. Arrangements for the summer internships will be made with the affiliated hospitals. A total of 2400 practicum hours which are obtained throughout the 24 consecutive month period are necessary to be eligible to sit for the registry exam. The RT program is to be completed during a 24 consecutive month period. See page 5 for special admission requirements for this program.

**Types of Jobs:** Hospital facilities, doctors and radiologists in private practice, civilian and military government agencies, industry.
**Recommended High School Subjects:** Two years of algebra.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| RAD | 110 | Radiologic Technology I | 5 |
| BIO | 115 | Human Anatomy and Physiology I | 4 |
| MTR | 101 | Medical Terminology I | 3 |
| ENL | 111 | English Composition I | 3 |
| MTH | 103 | College Algebra | 3 |
| | | | 18 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| RAD | 120 | Radiologic Technology II | 7 |
| BIO | 125 | Human Anatomy and Physiology II | 4 |
| ENL | 121 | English Composition II | 3 |
| MTH | 104 | College Trigonometry | 3 |
| | | | 17 |

| | | | |
|---|---|---|---|
| RAD | 200 | FIRST SUMMER INTERNSHIP | No Credit |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| RAD | 230 | Radiologic Technology III | 10 |
| PHS | 112 | Introductory Physics | 4 |
| | | Elective-Psychology* | 3 |
| | | | 17 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| RAD | 240 | Radiologic Technology IV | 10 |
| PHS | 122 | Radiation Physics | 3 |
| SOC | 111 | Introduction to Sociology | 3 |
| | | | 16 |

| | | | |
|---|---|---|---|
| RAD | 200 | SECOND SUMMER INTERNSHIP | No Credit |

*Psychology Electives:

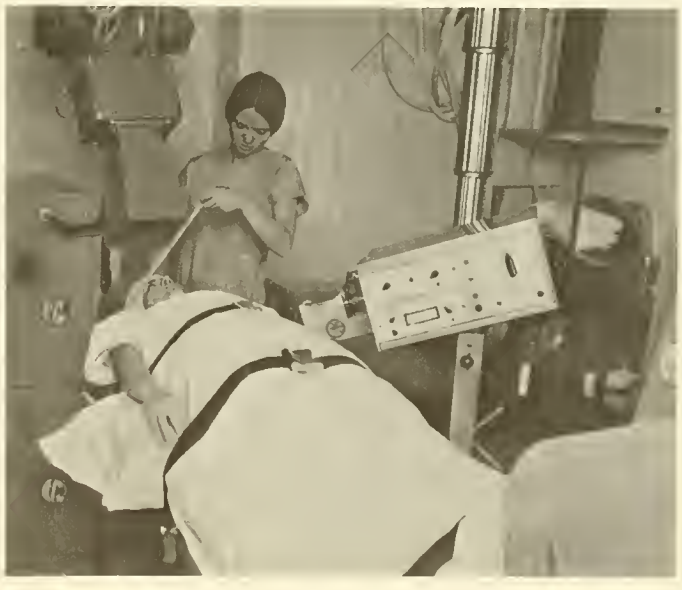
| | | | |
|---|---|---|---|
| PSY | 111 | General Psychology | 3 |
| PSY | 201 | Abnormal Psychology | 3 |
| PSY | 241 | Social Psychology | 3 |

PROGRAM OBJECTIVES

The general program objective is to provide students with the academic and practical educational experiences which will enable them to pass the National Radiological Technology Registry Examination and to qualify for employment as a registered radiologic technologist. Graduates will also be able to transfer to a four-year program in radiological technology.

The Radiologic Technology graduate should be able to:

1. distinguish between the different types of imaging systems.
2. recognize differences between diagnostic and inferior quality radiographs.
3. understand and utilize knowledge of the general effects of radiation on the body.
4. apply knowledge of basic electronics and physics necessary in daily radiographic practice.
5. describe the effects of ionizing radiation in biological systems.
6. operate effectively within and be fully aware of the basic organizational structure of a radiology department.
7. use knowledge of anatomy, positioning, and radiographic techniques to accurately demonstrate anatomical structure on a radiograph.
8. state the importance of providing for the physical and emotional needs of the patient.
9. apply knowledge of mathematical calculations to determination of exposure factors.
10. utilize effective communication skills.
11. use correct medical and anatomical terminology as applied to radiological technology.



## Secretarial Science (BS)-Executive Associate Degree/Two Years

This program provides proficiency in the secretarial skills of typing, shorthand, and general office practices. Supplementary courses in accounting, business, and liberal studies are included in the program.

**Types of Jobs:** Business, commerce, government, industry, or the professions.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| MGT | 230 | Business Communications | 3 |
| MGT | 111 | Business Mathematics | 3 |
| SEC | 111 | Typewriting I | 3 |
| SEC | 114 | Shorthand I | 3 |
| ENL | 111 | English Composition I | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| ACC | 121 | Elementary Accounting | 3 |
| SEC | 121 | Typewriting II | 3 |
| SEC | 124 | Shorthand II | 3 |
| SEC | 129 | Secretarial Procedures | 3 |
| | | Social Science Elective | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| SEC | 231 | Typewriting III | 3 |
| SEC | 234 | Shorthand Workshop | 6 |
| ENL | 202 | Fundamentals of Speech | 3 |
| MGT | 110 | Principles of Business | 3 |
| | | | 15 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| SEC | 244 | Secretarial Workshop | 8 |
| SEC | 245 | Office Internship | 1 |
| MGT | 248 | Supervision & Human Relations | 3 |
| | | Elective | 3 |
| | | | 15 |

## Secretarial Science (BS)-Legal Associate Degree/Two Years

This program provides proficiency in the secretarial skills of typing, shorthand, the operation of business machines, and general office practices. Supplementary courses in business law and liberal studies are included in the program.

**Types of Jobs:** Business, commerce, and law.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| MGT | 230 | Business Communications | 3 |
| MGT | 111 | Business Mathematics | 3 |
| SEC | 111 | Typewriting I | 3 |
| SEC | 114 | Shorthand I | 3 |
| ENL | 111 | English Composition I | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| ACC | 121 | Elementary Accounting | 3 |
| SEC | 121 | Typewriting II | 3 |
| SEC | 124 | Shorthand II | 3 |
| SEC | 129 | Secretarial Procedures | 3 |
| | | Social Science Elective | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| SEC | 231 | Typewriting III | 3 |
| SEC | 234 | Shorthand Workshop | 6 |
| ENL | 202 | Fundamentals of Speech | 3 |
| MGT | 231 | Business Law I | 3 |
| | | | 15 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| SEC | 244 | Secretarial Workshop | 8 |
| SEC | 245 | Office Internship | 1 |
| MGT | 241 | Business Law II | 3 |
| | | Elective | 3 |
| | | | 15 |

## Secretarial Science (BS)-Medical Associate Degree/Two Years

This program provides proficiency in the secretarial skills of typing, shorthand, the operation of business machines, and general office practices. Supplementary courses in biology, medical terminology, and liberal studies are included in the program.

**Types of Jobs:** Doctors, dentists, hospitals, and various health occupation offices.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| MGT | 230 | Business Communications | 3 |
| MGT | 111 | Business Mathematics | 3 |
| SEC | 111 | Typewriting I | 3 |
| SEC | 114 | Shorthand I | 3 |
| ENL | 111 | English Composition I | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| ACC | 121 | Elementary Accounting | 3 |
| SEC | 121 | Typewriting II | 3 |
| SEC | 124 | Shorthand II | 3 |
| SEC | 129 | Secretarial Procedures | 3 |
| BIO | 121 | Basic Anatomy & Physiology | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| SEC | 231 | Typewriting III | 3 |
| SEC | 234 | Shorthand Workshop | 6 |
| ENL | 202 | Fundamentals of Speech | 3 |
| MTR | 101 | Medical Terminology I | 3 |
| | | | 15 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| SEC | 244 | Secretarial Workshop | 8 |
| SEC | 245 | Office Internship | 1 |
| | | Social Science Elective | 3 |
| MTR | 102 | Medical Terminology II | 3 |
| | | | 15 |

PROGRAM OBJECTIVES

The general objective of the Secretarial Science program is to enable the student to master one of three secretarial fields: executive, legal, or medical. Distinct and singular studies related to each field are stressed along with a broad spectrum of general and basic education courses to enable graduates to enter and to progress in the secretarial profession.

The graduate should be able to:

1. demonstrate proficiency in administrative secretarial skills.
2. apply terminology, utilize forms, and use other skills unique to the area of specialization – executive, legal, or medical.
3. compose effective written and oral communications.
4. employ competencies in specialized secretarial office procedures.
5. illustrate extensive knowledge of modern office equipment and office supplies.
6. apply working knowledge of advanced reprographics, word and information processing, and computational skills.
7. assess and influence behavior among supervisors, peers, and subordinates.
8. apply general knowledge of the social sciences, and possess an awareness of their effect on our society.
9. identify the need for physical fitness and positive leisure activities.

## Service and Operation of Heavy Construction Equipment (SO) Certificate/Two Years

This program provides the student with the principles of maintaining, repairing and operating many types of construction equipment. It includes the rebuilding of internal combustion engines, basic surveying, and complete mechanical safety measures.

**Types of Jobs:** Operation, mechanical repair, service of heavy equipment. Self-employed or work with contractors, dealers, miners, and quarriers.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| SOE | 713 | Service and Operation I (8 weeks) | 7 |
| SOE | 714 | Service and Operation II (8 weeks) | 7 |
| MTH | 710 | Technical Mathematics I | 3 |
| | | | 17 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| SOE | 723 | Service and Operation III (8 weeks) | 6 |
| SOE | 724 | Service and Operation IV (8 weeks) | 6 |
| ENL | 711 | Communications | 3 |
| | | | 15 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| SOE | 835 | Service and Operation V (8 weeks) | 6 |
| SOE | 836 | Service and Operation VI (8 weeks) | 6 |
| | | Optional Elective | 0/3 |
| | | | 12/15 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| SOE | 847 | Service and Operation VII (8 weeks) | 6 |
| SOE | 848 | Service and Operation VIII (8 weeks) | 6 |
| | | Optional Elective | 0/3 |
| | | | 12/15 |

PROGRAM OBJECTIVES

The general objective of the Service and Operation of Heavy Equipment program is to provide the student with the instruction required to qualify for a position in various phases of the construction equipment industry and at various levels of employment.

A graduate of Service and Operation should be able to:

1. practice approved safety procedures and incorporate them into various work situations.
2. read and interpret equipment manuals and issue clear, legible, and complete service reports.
3. identify and manipulate tools of the trade.
4. describe the operation and demonstrate troubleshooting, maintenance and repair of internal combustion engines.
5. troubleshoot, maintain, and repair the complete power train with its related components such as brake systems.
6. demonstrate the use of oxyacetylene welding, cutting, brazing, and electric welding applications.
7. distinguish the various types of hydraulic systems, power shift transmissions, torque converters, fuel systems, and heavy duty electrical systems found on construction equipment as well as maintain, troubleshoot, and repair these systems.
8. demonstrate the use of transits and hand levels as applied to construction layouts.
9. apply preventive maintenance techniques to all heavy equipment systems.
10. demonstrate the use of various pieces of heavy equipment employing earth-moving techniques accepted by industry.
11. use appropriate mathematical skills and competencies to solve applied problems in the field of heavy equipment.
12. identify the personal attributes required for successful relationships with employers, customers, and fellow employees.

## Sign Painting (SP)
## Certificate/Two Years

This program provides practical experience in lettering skills, design, layout and type finishing of signs and showcards. Materials, equipment, and safety practices used in painting, building, and sign erecting are stressed.

**Types of Jobs:** Self-employment; work with sign painters, bottlers, outdoor advertisers, department stores, theaters, television stations, and truck fleets.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| SIG | 711 | Sign Painting I | 10 |
| MTH | 710 | Technical Mathematics I | 3 |
| | | | 13 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| SIG | 721 | Sign Painting II | 10 |
| ENL | 711 | Communications | 3 |
| | | | 13 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| SIG | 811 | Sign Painting III | 10 |
| | | Elective* | 3 |
| | | | 13 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| SIG | 821 | Sign Painting IV | 10 |
| | | Elective* | 3 |
| | | | 13 |

*Suggested Electives

| | | |
|---|---|---|
| ACC | 121 | Elementary Accounting |
| MGT | 247 | Small Business Management |

PROGRAM OBJECTIVES

The overall objective of the program is to prepare students for employment as sign painters.

A graduate of the Sign Painting program should be able to:

1. construct the basic alphabet using pencil techniques.
2. use showcard paint in the construction of signs.
3. name, use, and care for brushes and special tools of the sign painting field.
4. lay out and paint paper signs and showcards using basic strokes, construction, and tempera color.
5. create (design, lay out, and paint) simple showcard and paper signs.
6. use bulletin colors, lettering quills, and brushes to produce a variety of signs.
7. letter with bulletin colors on a variety of surfaces including glass, metal, wood, plastic, and paper.
8. design and produce signs using gold leaf techniques.
9. design and produce small billboards.
10. use elementary math operations (addition, subtraction, multiplication, division) including decimals, fractions, and conversions, as they apply to sign painting.
11. write clear, concise, legible, and accurate reports, business memorandums, and business letters.

## Technical Illustration (TI)
## Associate Degree/Two Years

This program prepares the student to interpret engineering drawings into three-dimensional illustrations. The program provides drawing and art skills, coupled with humanities, mathematics, and communications courses to enhance occupational opportunities.

**Types of Jobs:** Technical illustrator for industry, either in an engineering or publications department. In the engineering field you would produce clear, accurate pictures drawn from blueprints for engineers; in publications, you would produce illustrations for company literature; parts and sales catalogs; maintenance, repair, and assembly manuals, charts, and handbooks.
**Recommended High School Subjects:** Two years of algebra, one year of science.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| EDT | 111 | Basic Drafting I (8 weeks) | 4 |
| EDT | 112 | Basic Drafting II (8 weeks) | 4 |
| ART | 111 | Basic Drawing | 3 |
| ENL | 111 | English Composition I | 3 |
| MTH | 103 | College Algebra | 3 |
| | | | 17 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| EDT | 121 | Power Transmission (8 weeks) | 4 |
| EDT | 122 | Mechanisms (8 weeks) | 4 |
| MTH | 104 | College Trigonometry | 3 |
| PED | | Physical Education | 1 |
| | | Elective* | 3 |
| | | | 15 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| EDT | 106 | Industrial Processes | 2 |
| ART | 121 | Basic Painting | 3 |
| ART | 232 | Lettering and Layout | 3 |
| GCO | 515 | Layout and Design | 3 |
| GCO | 516 | Typographic Composition | 3 |
| PED | | Physical Education | 1 |
| | | Elective* | 3 |
| | | | 18 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| ART | 241 | Media and Techniques | 3 |
| GCO | 525 | Process Camera | 3 |
| GCO | 526 | Film Assembly and Imposition | 3 |
| ENL | 121 | English Composition II | 3 |
| | | Elective* | 3/4 |
| | | | 15/16 |

*Suggested Electives

| | | | |
|---|---|---|---|
| MGT | 110 | Principles of Business | 3 |
| ENL | 202 | Fundamentals of Speech | 3 |
| GOV | 231 | American Government-National | 3 |
| GOV | 241 | State and Local Government | 3 |
| HIS | 111 | Western Civilization I | 3 |
| HIS | 121 | Western Civilization II | 3 |
| HIS | 231 | U.S.—Survey I | 3 |
| JOU | 232 | Copyreading and Editing | 3 |
| PSY | 111 | General Psychology | 3 |
| SOC | 111 | Introduction to Sociology | 3 |
| ECO | 201 | Principles of Economics | 3 |
| ESC | 100 | Environmental Science | 3 |
| GEL | 105 | Physical Geology | 4 |

PROGRAM OBJECTIVES

The general objective of the Technical Illustration program is to prepare the student with the skills and competencies necessary for employment as a technical illustrator in industry, or for transfer to a baccalaureate degree program.

A graduate of the Technical Illustration program should be able to:

1. interpret engineering drawings into three-dimensional illustrations.
2. letter and lay out using a variety of mediums, black and white and color, both in line and continuous tone.
3. relate technical knowledge to the areas listed above in order to make rational decisions.
4. follow written and oral directions.
5. demonstrate respect for equipment and use appropriate safety precautions when working around such equipment.
6. demonstrate the personal traits of promptness, willingness to work, and receptivity to supervision.
7. utilize appropriate mathematical competencies necessary for job performance and for the development of visualization skills and logical thought processes.
8. communicate clearly, both orally and in writing.
9. demonstrate knowledge of a lifetime sport which will provide recreation and promote physical fitness.

## Technology Studies (TS) Associate Degree

Technology Studies is a flexible program designed especially for, but not limited to, people currently employed in industry or business. Course selection is based almost entirely upon the goals of the individual student. As many as 30 credits may be awarded through advanced placement, credit by examination, or credit for work/life experience, thus reducing the number of courses to be completed on campus. Most students will complete this program on a part-time basis; therefore, a number of specialized courses will be offered in a rotating sequence to provide increased scheduling opportunities.

The minimum requirements for the Associate Degree in Technology Studies are:

1. Successfully complete a minimum of 60 credit hours of associate degree level courses (see page 72 for definition) in a planned program of study.

2. The 60 credit hours must include at least 18 credits of general education core courses selected from the following:

| | Credits |
|---|---|
| Communications | 6 |
| Mathematics | 6 |
| Natural Sciences | 3/4 |
| Social Sciences and Humanities | 3 |
| | 18/19 |

3. Forty-two credits must be taken as electives. Thirty elective credits must be taken in technical career or vocational courses which are applicable to the Associate of Applied Science degree. Elective courses should be selected primarily on the basis of the student's vocational goals. The electives enable the student to select those vocational and/or general education courses which best meet his/her career, professional, and personal objectives.

4. The student must have participated in a planned educational program of studies. This plan should be developed in conjunction with an advisor and be filed with the appropriate division director prior to the completion of the first 18 hours of credit.

INDIVIDUAL CURRICULUM POSSIBILITIES

In consultation with an advisor, the student may select precisely those courses which best meet his/her needs and allow him/her to reach a chosen goal. Examples of groups of courses which a student might select in designing his/her program are shown below.

Industrial Emphasis – Courses selected may include:

Courses in specialized fields, such as Machine Tool Technology, Electronics, Automotive Technology (based on student interest and course availability)
Industrial and Organizational Psychology
Supervision and Human Relations
Quality Control
Motion and Time Study
Specialized mathematics, such as statistics, applied calculus
Technical Writing

Engineering Emphasis – A student taking the Engineer in Training (EIT) courses (see page 70) may use completed EIT courses to fulfill requirements of the Technology Studies Degree. These courses are offered on a rotating, part-time basis and include:

Statics
Strength of Materials I
Dynamics
Fluid Mechanics
Strength of Materials II
Engineering Economics
Engineering Chemistry
Thermodynamics
Engineering Physics
Engineering Electronics

Management and Supervision Emphasis – Courses selected may include:

Principles of Business
Business Communications
Economics
Accounting
Supervision and Human Relations
Small Business Management
Psychology
Business Law
Specialized Mathematics
Computer Science
Specialized technical courses directed toward the student's vocational objectives

PROGRAM OBJECTIVES

The general objective of the Technology Studies program is to enable the employed person to upgrade his/her skills and knowledge, whether for personal or professional reasons.

The graduate should be able to:

1. demonstrate potential for growth through the use of skills and competencies acquired.

2. formulate ideas logically and organize them into a productive plan to accomplish a chosen goal.

3. demonstrate increased vocational knowledge and skills.

4. illustrate an attitude of responsibility to self, employer, and community.

5. communicate effectively in interpersonal and job related activities.

6. demonstrate comprehensive knowledge of communication and mathematical skills.

7. apply general knowledge of the social and natural sciences and possess an awareness of their effect on our environment.

## Tool Design Technology (TD)
## Associate Degree/Two Years

This program provides instruction in drafting and tool production techniques and in the production of tool drawings. It emphasizes planning and making drawings of special mechanical devices (dies, gages, cutting tools, jigs, fixtures) ranging from simple hand tools to complex progressive dies. The student is taught to write programs for production jobs on tape-controlled machines.

**Types of Jobs:** Tool, machine, and product designer; numerical programmer, design drafting, estimator, and systems program designer.
**Recommended High School Subjects:** Two years of algebra.
*GENERAL ELECTIVES are courses chosen from outside your program of concentration.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| EDT | 106 | Industrial Processes | 2 |
| EDT | 111 | Basic Drafting I (8 weeks) | 4 |
| EDT | 112 | Basic Drafting II (8 weeks) | 4 |
| ENL | 111 | English Composition I | 3 |
| MTH | 103 | College Algebra | 3 |
| PED | | Physical Education | 1 |
| | | | 17 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| EDT | 121 | Power Transmission (8 weeks) | 4 |
| EDT | 122 | Mechanisms (8 weeks) | 4 |
| ENL | 121 | English Composition II | 3 |
| MTH | 104 | College Trigonometry | 3 |
| PED | | Physical Education | 1 |
| | | | 15 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| TDT | 231 | Tool Drafting (8 weeks) | 4 |
| TDT | 232 | Fixture Design (8 weeks) | 4 |
| PHS | 100 | Physics-Mechanics | 4 |
| | | Elective-General* | 3/4 |
| | | | 15/16 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| TDT | 241 | Gage Design and Programming (8 weeks) | 4 |
| TDT | 242 | Die Design (8 weeks) | 4 |
| PHS | 106 | Introduction to Metallurgy | 4 |
| | | Elective-General* | 3/4 |
| | | | 15/16 |

PROGRAM OBJECTIVES

The general objective of this program is to prepare the student with the skills and competencies necessary to enter the tool design area of engineering.

A graduate of the Tool Design Technology program should be able to:

1. describe and apply the various methods of manufacturing as they relate to tool design.
2. select cutting tool materials to satisfy various metal removal operations.
3. apply tolerance limits and fits to satisfy the required manufacturing process.
4. apply calculations to determine cutting speeds and feeds for various metal removal applications.
5. design jigs and fixtures to hold tools and workpieces for the various metal removal applications.
6. design various kinds of gages and gaging setups to insure quality control.
7. write numerical control programs.
8. design piercing, stamping, and forming dies.
9. apply the basic principles of physics and metallurgy to the tool design process.
10. utilize the appropriate mathematical skills and competencies to solve applied problems in the design process.
11. communicate effectively in small group and interpersonal situations that may occur in industry.
12. function as an informed and participating citizen in a democratic society through exposure to the humanities and social sciences.
13. develop and utilize the fundamental skills provided through exposure to lifetime sports.

## Welding (WE)
## Certificate/Two Years

This program emphasizes theory and manipulative skills. It stresses developments and techniques in electric, oxyacetylene, and inert gas shielded methods of welding.

**Types of Jobs:** Welder, welder operator, fitter, specialist, supervisor, and inspector.

FIRST SEMESTER

| | | Credits |
|---|---|---|
| WEL 711 | Acetylene Welding | 12 |
| MTH 710 | Technical Mathematics I | 3 |
| | | 15 |

SECOND SEMESTER

| | | Credits |
|---|---|---|
| WEL 721 | Electric Welding | 12 |
| ENL 711 | Communications | 3 |
| | | 15 |

THIRD SEMESTER

| | | Credits |
|---|---|---|
| WEL 831 | Inert Gas Welding | 12 |
| EDT 107 | Blueprint Reading | 2 |
| | Optional Elective | 0/3 |
| | | 14/17 |

FOURTH SEMESTER

| | | Credits |
|---|---|---|
| WEL 841 | Welding (Advanced) | 12 |
| | Optional Elective | 0/3 |
| | | 12/15 |

PROGRAM OBJECTIVES

The general objective of this program is to prepare the student with marketable skills in the general field of welding.

A graduate of the Welding program should be able to:

1. demonstrate proficiency in welding skills employing the oxyacetylene, shielded metal arc, gas tungsten arc, and gas metallic arc welding processes.
2. operate power equipment essential to perform welding operations.
3. employ safe welding practices common to shop and field operations.
4. distinguish types of welding power sources, their characteristics, uses, and limitations.
5. perform visual, destructive, and non-destructive testing and inspection methods.
6. construct weldments from sketches, blueprints or verbal instructions employing proper use of welding symbols.
7. select the proper welding process, welding procedures, supplies, etc., within reasonable economic limitations.
8. employ simple shop methods for determining types of metals (ferrous and non-ferrous).
9. apply the physical and mechanical properties of metals, as related to weldability, during the welding process.
10. perform duplication of welding qualification tests according to specifications of American Welding Society, The American Society of Mechanical Engineers and the American Petroleum Institute Codes.
11. develop positive societal and work habits
12. utilize the appropriate mathematical skills and competencies to solve applied problems in the field of welding.
13. demonstrate basic skills in speech and technical writing.

## Wood Products Technology (WD)
## Associate Degree/Two Years
## New Program—Begins Fall 1981

Wood Products Technology is designed to prepare students for mid-management positions in the wood processing and manufacturing industries and to improve the management capabilities of people presently employed in the wood industry. The program combines courses in wood processing with courses in business to prepare students for various types of jobs. Students gain practical experience at the college's sawmill and through a co-op or internship experience.

**Types of Jobs:** Lumber inspector, dry kiln operator, sawyer, trimmer-edger, lumber yard supervisor, quality control technician, log and lumber buyer or seller, wood products sales.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| WPT | 111 | Wood Properties and Utilization | 3 |
| FOR | 111 | Dendrology (Tree & Shrub Identification) | 3 |
| FOR | 113 | Forest Mensuration | 3 |
| MTH | 500 | Technical Mathematics II | 3 |
| ENL | 111 | English Composition I | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| WPT | 121 | Lumber and Log Grading | 3 |
| WPT | 122 | Sawmilling I | 3 |
| WPT | 123 | Lumber Drying | 3 |
| MGT | 110 | Principles of Business | 3 |
| ENL | 201 | Technical Writing | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| WPT | 231 | Wood Industry Co-op/Internship | 3 |
| WPT | 232 | Sawmilling II | 3 |
| WPT | 233 | Quality Control | 3 |
| ACC | 121 | Elementary Accounting | |
| | | or | 3 |
| ACC | 112 | Accounting I | |
| MKT | 240 | Marketing | 3 |
| | | | 15 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| WPT | 243 | Production Management | 3 |
| WPT | 244 | Equipment and Machinery | 3 |
| FOR | 242 | Forest Products | 3 |
| MGT | 248 | Supervision and Human Relations | 3 |
| | | Elective | 3 |
| | | | 15 |

PROGRAM OBJECTIVES

The objective of the Wood Products Technology program is to prepare students for employment in the wood industry and related businesses and to improve the management capabilities of those who are presently employed in the wood industry.

A graduate should be able to:

1. identify the important commercial wood species and relate their wood properties to their potential uses.
2. identify selected species of trees and shrubs by their scientific and common names, general uses, site associations, and general distributions.
3. describe the processes involved in the breakdown of logs into various wood products.
4. grade hardwood and softwood logs and lumber to standard.
5. make recommendations concerning the replacement, addition, and upgrading of machinery and personnel.
6. identify the process of finding markets, methods of merchandising, distribution from manufacturer to consumer, and mark-up procedures.
7. evaluate the quality control of wood products at various stages of manufacturing.
8. apply on-the-job experience in the buying of logs, processing of wood, or marketing of wood products.
9. demonstrate familiarity with the types, operation, and basic maintenance of the more important machines used in wood processing.
10. demonstrate familiarity with the principles of cutting lumber to obtain the best grade.
11. demonstrate basic skills in the maintenance of sawmills.
12. demonstrate basic skills in the handling, stacking, and kiln and air drying of lumber.
13. apply knowledge of general business organization, planning, economics, financing, business law, workmen's compensation, overhead determination, and profit and loss statements.
14. demonstrate the techniques needed for leadership and interpersonal relationships in a supervisory role.
15. understand the basic concepts, techniques, procedures, and principles of accounting and bookkeeping.
16. write accurate technical reports using proper language structure and demonstrate skill in basic oral communication.
17. solve basic arithmetic, algebraic, and trigonometric problems and apply skills in these areas in solving practical mathematical problems related to the wood products industry.
18. demonstrate fundamental skills in lifetime sports.

# COLLEGE & UNIVERSITY TRANSFER PROGRAMS

## General Studies

The Associate of Arts in General Studies is the degree usually completed by students who wish to transfer to a four-year institution offering the last two years of study toward a four-year degree. The Associate of Arts Degree allows considerable flexibility in course selection. Students are encouraged to select courses which can be transferred regardless of the field of concentration. It is strongly recommended that as soon as possible you identify the school to which you wish to transfer. You and your WACC advisor can then plan a program at WACC that will be within the broad outline of the specific four-year degree and school in which you are interested.

OBJECTIVES

Upon completion of the General Studies Program the student will:

1. Have general knowledge in each of the following areas: Communications, Quantitative Concepts and Skills, Humanities, Social Sciences, Natural Sciences, and the building and maintenance of good health.

2. Have a comprehensive knowledge of one or more of the following areas: Communications, Quantitative Concepts and Skills, Humanities, Social Sciences, Natural Sciences.

3. Have the academic background essential for transfer into related baccalaureate degree programs.

4. Demonstrate the ability to reason logically, to analyze, synthesize, and evaluate information, and to apply mathematical reasoning processes and/or the scientific method.

5. Display open-mindedness and a willingness to appropriately modify performance or attitudes when faced with sufficient reason to do so.

6. Produce work that demonstrates ability to integrate various academic and practical experiences.

7. Display an awareness of our cultural traditions and a sensitivity toward the traditions of other cultures.

8. Display acceptable social values and attitudes in day-to-day activity, including productive citizenship and responsibility toward self and others.

9. Experience greater joy in living because of an increased awareness of social, cultural, and natural environments.

GRADUATION REQUIREMENTS

1. Successfully complete the general college graduation requirements for all Associate Degree Programs. (See pg. 119.)

2. Successfully complete a total of 64 credits of Associate Degree level course work (courses numbered 100 - 299) selected from the General Education Core areas (as defined below) and from health and physical education.

GENERAL EDUCATION CORE

**Communications**
English
Languages
Speech

**Quantitative Concepts & Skills**
Mathematics
Statistics

**Humanities**
Philosophy
History
Government

**Social Sciences**
Economics
Psychology
Sociology

**Natural Sciences**
Biology
Chemistry
Physics
Environmental Science
Geology
Geography

Appropriate associate degree courses offered outside the general education core may be substituted with the approval of the student's advisor and Division Director.

3. Successfully complete a core of 25/26 Associate Degree level credits of general education which will include:

| | |
|---|---|
| Communications | 6 credits |
| Quantitative Concepts and Skills | 6 credits |
| Humanities | 3 credits |
| Social Science | 3 credits |
| Natural Science (to include at least 3 hours of laboratory) | 7-8 credits |

4. Successfully complete 2 credits in health and 2 credits in physical education OR 4 credits in physical education. Part-time students may be exempt from this requirement.

5. Complete all placement testing required by the College. Students must demonstrate basic mastery of English, reading, and mathematics through placement testing or successful completion of appropriate courses designed to provide basic skills and competencies in these areas.

### The General Studies Program Curriculum (GS)

To meet their individual needs, students may substitute for courses listed below upon recommendation of the student's academic advisor and approval by the appropriate Division Director. It is strongly recommended that as early as possible the student review the requirements of the particular program of the institution he/she plans to attend upon completing the General Studies program. Elective credits can then be selected to meet these requirements.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 111 | English Composition I | 3 |
| MTH | 101 | Introduction to Mathematics I | |
| | | or | 3 |
| MTH | 103 | College Algebra | |
| PED | | Physical Education | 1 |
| | | Humanities Elective | 3 |
| | | *Natural Science Elective | 3-4 |
| | | General Core Elective | 3 |
| | | | 16-17 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 121 | English Composition II | 3 |
| MTH | 102 | Introduction to Mathematics II | |
| | | or | 3 |
| MTH | 104 | College Trigonometry | |
| PED | | Physical Education | 1 |
| | | Social Science Elective | 3 |
| | | *Natural Science Elective | 3-4 |
| | | General Core Elective | 3 |
| | | | 16-17 |

THIRD SEMESTER

| | Credits |
|---|---|
| **An elective program based on the student's major educational and vocational interests. Completion of Physical Education requirement. | |
| | 16-18 Credits |

FOURTH SEMESTER

| | |
|---|---|
| **An elective program based on the student's major educational and vocational interests. | |
| | 16-18 Credits |

*To include at least one course with a 3 hour laboratory.

**Elective credits may come from any 100 or 200 level associate degree courses offered by the College. It is strongly recommended that the majority of these credits be taken within the General Education Core discipline areas to assure maximal transferability and congruence with the requirements of most baccalaureate institutions. Courses selected from outside the General Education Core need the approval of the student's advisor and Division Director.

## Curriculum Guides

Students who contemplate professional or semi-professional preparation in the arts and sciences may initiate their undergraduate studies at WACC. Since most students who undertake such a program at the College plan to transfer to four-year institutions to complete the requirements for the baccalaureate degree, they are advised to schedule courses that meet the requirements of the institution to which transfer is desired. The student is reminded that his/her success in transferring to a particular college will largely depend on the quality of academic achievement at WACC.

Curriculum guides for recommended associate degree programs in career areas requiring education beyond an associate degree are shown below. These include career areas with:

1. Business Administration Emphasis
2. Communications Emphasis
3. Education Emphasis
4. Math-Science Emphasis
5. Pre-Law Emphasis
6. Pre-Medical Emphasis
7. Pre-Theological Emphasis
8. Social Work Emphasis

The typical programs suggested are *recommendations, not requirements.* They indicate particular course selections within the guidelines of the General Studies Program.

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### Business Administration Emphasis

This program is designed to provide the first two years of instruction for students who wish to transfer to a four-year institution and obtain their baccalaureate degree in Business Administration. Students entering this curriculum should evidence a strong desire, aptitude, and motivation toward business. Career possibilities for students who complete a four-year program include accounting, economics, finance, foreign commerce, economic geography, industrial management, personnel management, insurance, marketing, and real estate.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 111 | English Composition I | 3 |
| MTH | 103 | College Algebra | 3 |
| HIS | 111 | Western Civilization I | |
| | | or | 3 |
| HIS | 231 | United States-Survey I | |
| MGT | 110 | Principles of Business | 3 |
| PED | | Physical Education | 1 |
| | | General Core Elective | 3 |
| | | | 16 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 121 | English Composition II | 3 |
| MTH | 201 | Elementary Statistics | 3 |
| HIS | 121 | Western Civilization II | |
| | | or | 3 |
| HIS | 241 | United States-Survey II | |
| ECO | 201 | Principles of Economics | 3 |
| PED | | Physical Education | 1 |
| | | General Core Elective | 3 |
| | | | 16 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 202 | Fundamentals of Speech | 3 |
| ACC | 112 | Accounting I | 3 |
| MGT | 231 | Business Law I | 3 |
| PSY | 111 | General Psychology | 3 |
| PED | | Physical Education | 1 |
| | | Natural Science Elective | 3-4 |
| | | | 16-17 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| ACC | 122 | Accounting II | 3 |
| MGT | 241 | Business Law II | 3 |
| CSC | 118 | Fundamentals of Computer Science | 3 |
| PED | | Physical Education | 1 |
| | | General Core Elective | 3 |
| | | Natural Science Elective | 3-4 |
| | | | 16-17 |

## Communications Emphasis

The program is designed to provide the first two years of instruction for students planning careers in some aspect of communications. Career possibilities include: advertising, broadcasting, free-lance writing, journalism, and public relations. The intent of this program is not to prepare students for immediate employment upon graduation. Its purpose is to allow students to explore various career areas in mass communications while completing course work designed for transfer to a four-year college or university.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 111 | English Composition I | 3 |
| JOU | 111 | News Writing | 3 |
| JOU | 113 | Principles of News Photography | 3 |
| MTH | 101 | Introduction to Mathematics I | 3 |
| PED | | Physical Education | 1 |
| | | General Core Elective | 3 |
| | | | 16 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 121 | English Composition II | 3 |
| BRC | 123 | News Writing for Radio | 3 |
| PSY | 111 | General Psychology | 3 |
| MTH | 102 | Introduction to Mathematics II | 3 |
| HIS | 111 | Western Civilization I | 3 |
| PED | | Physical Education | 1 |
| | | | 16 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 235 | Creative Writing | 3 |
| JOU | 231 | Feature Writing | 3 |
| SOC | 111 | Introduction to Sociology | 3 |
| PED | | Physical Education | 1 |
| | | General Core Elective | 3 |
| | | Natural Science Elective | 3-4 |
| | | | 16-17 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 201 | Technical Writing | 3 |
| ENL | 202 | Fundamentals of Speech | 3 |
| ADV | 101 | Principles of Advertising | 3 |
| PED | | Physical Education | 1 |
| | | General Core Elective | 3 |
| | | Natural Science Elective | 3-4 |
| | | | 16-17 |

## Education Emphasis

The Education Emphasis provides the student with a program of studies typical of that found in the first two years of a four-year professional education curriculum. The student thus has the opportunity to complete many of the general education courses and to become familiar with education as a career. The student who enrolls in this program is generally expected to continue toward a baccalaureate degree after graduation. However, the student who is interested in an educational role as a paraprofessional may find employment in certain types of positions following completion of the program.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 111 | English Composition I | 3 |
| EDU | 111 | Introduction to Education | 3 |
| PSY | 111 | General Psychology | 3 |
| MTH | 101 | Introduction to Mathematics I | |
| | | or | 3 |
| MTH | 103 | College Algebra | |
| PED | | Physical Education | 1 |
| | | General Core Elective | 3 |
| | | | 16 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 121 | English Composition II | 3 |
| ECO | 201 | Principles of Economics | 3 |
| SOC | 121 | Introduction to Social Work | 3 |
| MTH | 102 | Introduction to Mathematics II | |
| | | or | 3 |
| MTH | 104 | College Trigonometry | |
| PED | | Physical Education | 1 |
| | | General Core Elective | 3 |
| | | | 16 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| MTH | 201 | Elementary Statistics | 3 |
| EDU | 121 | Children's & Young Adult Literature | 3 |
| HIS | 111 | Western Civilization I | 3 |
| PED | | Physical Education | 1 |
| | | General Core Elective | 3 |
| | | Natural Science Elective | 3-4 |
| | | | 16-17 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 202 | Fundamentals of Speech | 3 |
| PSY | 231 | Educational Psychology | 3 |
| HIS | 121 | Western Civilization II | 3 |
| PED | | Physical Education | 1 |
| | | General Core Elective | 3 |
| | | Natural Science Elective | 3-4 |
| | | | 16-17 |

### Math-Science Emphasis

Students with a strong background in mathematics and science have many opportunities in such fields as engineering, research, actuarial science, time-study analysis, economics, as well as such careers as mathematical or scientific technicians in business, industry, and government. Students entering this curricular emphasis area should evidence aptitude and motivation toward mathematics and science.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 111 | English Composition I | 3 |
| MTH | 103 | College Algebra | |
| | | or | 3-4 |
| MTH | 238 | Calculus I | |
| HIS | 111 | Western Civilization I | |
| | | or | 3 |
| HIS | 231 | United States-Survey I | |
| | | Laboratory Science (Biology, Chemistry, Physics, or Geology) | 4 |
| ECO | 201 | Principles of Economics | 3 |
| PED | | Physical Education | 1 |
| | | | 17-18 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 121 | English Composition II | 3 |
| MTH | 104 | College Trigonometry | |
| | | or | 3-4 |
| MTH | 248 | Calculus II | |
| HIS | 121 | Western Civilization II | |
| | | or | 3 |
| HIS | 241 | United States-Survey II | |
| | | Laboratory Science (Biology, Chemistry, Physics, or Geology) | 4 |
| PED | | Physical Education | 1 |
| | | General Core Elective | 3 |
| | | | 17-18 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| | | Literature or Sociology | 3 |
| MTH | 201 | Elementary Statistics | 3 |
| | | Laboratory Science (Biology, Chemistry, Physics, or Geology) | 4 |
| | | Computer Science | 3 |
| PED | | Physical Education | 1 |
| | | General Core Elective | 3 |
| | | | 17 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| | | Literature or Sociology | 3 |
| MTH | 204 | Matrix Algebra | 3 |
| | | Laboratory Science (Biology, Chemistry, Physics, or Geology) | 4 |
| | | Computer Science | 3 |
| PED | | Physical Education | 1 |
| | | General Core Elective | 3 |
| | | | 17 |

### Pre-Law Emphasis

The student who plans to enter law school should structure a program which includes a broad base of liberal studies. The Association of American Law Schools has drawn up a statement that it believes describes the best type of pre-legal training. While the statement does not specify exact courses, it does emphasize three areas to be developed:

1. Comprehension and expression in words
2. Critical understanding of human institutions and values
3. Creative power in thinking

In an attempt to aid the student in the acquisition of these skills, the following program is suggested. Modifications in this program to meet particular student needs should be planned in conjunction with the pre-law advisor.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 111 | English Composition I | 3 |
| MTH | 103 | College Algebra | |
| | | or | 3-4 |
| MTH | 238 | Calculus I | |
| HIS | 111 | Western Civilization I | 3 |
| PSY | 111 | General Psychology | 3 |
| PED | | Physical Education | 1 |
| | | General Core Elective | 3 |
| | | | 16-17 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 121 | English Composition II | 3 |
| MTH | 104 | College Trigonometry | |
| | | or | 3-4 |
| MTH | 248 | Calculus II | |
| HIS | 121 | Western Civilization II | 3 |
| SOC | 111 | Introduction to Sociology | 3 |
| PED | | Physical Education | 1 |
| | | General Core Elective | 3 |
| | | | 16-17 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 202 | Fundamentals of Speech | 3 |
| ACC | 112 | Principles of Accounting I | 3 |
| PHL | 111 | Introduction to Philosophical Analysis | 3 |
| GOV | 231 | American Government-National | 3 |
| PED | | Physical Education | 1 |
| | | Natural Science Elective | 3-4 |
| | | | 16-17 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| ECO | 201 | Principles of Economics | 3 |
| ACC | 122 | Principles of Accounting II | 3 |
| PHL | 121 | Ethics and Political Analysis | 3 |
| GOV | 241 | State and Local Government | 3 |
| PED | | Physical Education | 1 |
| | | Natural Science Elective | 3-4 |
| | | | 16-17 |

## Pre-Medical Emphasis

The Pre-Medical Emphasis curriculum will provide preparation for such professions and careers as medicine, pharmacy, dentistry, optometry, veterinary medicine, chiropractic, other health professions, and scientific research. Students seeking to transfer credits toward the baccalaureate degree and whose major interests center on chemistry, physics, biology, and associated disciplines should pursue this curriculum. Because of the rigorous and time-consuming nature of the medical programs, which include much training in clinical laboratories and patient-related experiences, students should evidence aptitude and motivation toward mathematics and science, with special emphasis on laboratory experience and manual dexterity.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 111 | English Composition I | 3 |
| MTH | 103 | College Algebra | |
| | | or | 3-4 |
| MTH | 238 | Calculus I | |
| HIS | 111 | Western Civilization I | |
| | | or | 3 |
| HIS | 231 | United States-Survey I | |
| BIO | 113 | General Biology I | 4 |
| CHM | 111 | General Chemistry I | 4 |
| | | | 17-18 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 121 | English Composition II | 3 |
| MTH | 104 | College Trigonometry | |
| | | or | 3-4 |
| MTH | 248 | Calculus II | |
| PSY | 111 | General Psychology | 3 |
| BIO | 123 | General Biology II | 4 |
| CHM | 121 | General Chemistry II | 4 |
| PED | | Physical Education | 1 |
| | | | 18-19 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| | | Literature or Sociology | 3 |
| PHS | 116 | General Physics I | 4 |
| BIO | 115 | Human Anatomy & Physiology I | 4 |
| PED | | Physical Education | 1 |
| | | General Core Electives | 3-6 |
| | | | 15-18 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| | | Literature or Sociology | 3 |
| PHS | 126 | General Physics II | 4 |
| BIO | 125 | Human Anatomy & Physiology II | 4 |
| BIO | 201 | Microbiology | 4 |
| PED | 201 | Personal & Community Health | 2 |
| | | | 17 |

## Pre-Theological Emphasis

This program is designed to provide the first two years of instruction for students planning careers in religious education, the missionary field, or the ministry. It is developed from the recommendations set forth by the Association of Theological Schools. They advise that such programs have a broad base of liberal studies, complemented by a major in either the humanities or the social sciences.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 111 | English Composition I | 3 |
| MTH | 101 | Introduction to Mathematics I | |
| | | or | 3 |
| MTH | 103 | College Algebra | |
| PSY | 111 | General Psychology | 3 |
| HIS | 111 | Western Civilization I | 3 |
| PED | | Physical Education | 1 |
| | | General Core Elective | 3 |
| | | | 16 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 121 | English Composition II | 3 |
| MTH | 102 | Introduction to Mathematics II | |
| | | or | 3 |
| MTH | 104 | College Trigonometry | |
| SOC | 111 | Introduction to Sociology | 3 |
| HIS | 111 | Western Civilization II | 3 |
| PED | | Physical Education | 1 |
| | | General Core Elective | 3 |
| | | | 16 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 202 | Fundamentals of Speech | 3 |
| PHL | 111 | Introduction to Philosophical Analysis | 3 |
| SOC | 231 | Marriage & the Family | 3 |
| PED | | Physical Education | 1 |
| | | Social Science Elective | 3 |
| | | Natural Science Elective | 3-4 |
| | | | 16-17 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| ECO | 201 | Principles of Economics | 3 |
| PHL | 121 | Ethics and Political Philosophy | 3 |
| PSY | 203 | Developmental Psychology | 3 |
| PED | | Physical Education | 1 |
| | | Social Science Elective | 3 |
| | | Natural Science Elective | 3-4 |
| | | | 16-17 |

## Social Work Emphasis

The Social Work Emphasis provides the student with preparation for various careers in the human services. With an Associate Degree, the student may find employment as a paraprofessional in such diverse fields as child care, gerontology, mental health, mental retardation, or social work. Or, students may continue study toward a baccalaureate degree at a four-year college or university. All courses in this program are designed to provide the student with both entry-level career skills and college transfer credit.

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 111 | English Composition I | 3 |
| SOC | 111 | Introduction to Sociology | 3 |
| MTH | 101 | Introduction to Mathematics I | |
| | | or | 3 |
| MTH | 103 | College Algebra | |
| PSY | 111 | General Psychology | 3 |
| PED | | Physical Education | 1 |
| | | General Core Elective | 3 |
| | | | 16 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| ENL | 121 | English Composition II | 3 |
| SOC | 121 | Introduction to Social Work | 3 |
| MTH | 102 | Introduction to Mathematics II | |
| | | or | 3 |
| MTH | 104 | College Trigonometry | |
| PSY | 201 | Abnormal Psychology | 3 |
| PED | | Physical Education | 1 |
| | | General Core Elective | 3 |
| | | | 16 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| SOC | 231 | Marriage and the Family | 3 |
| MTH | 201 | Elementary Statistics | 3 |
| PSY | 203 | Developmental Psychology | 3 |
| PED | | Physical Education | 1 |
| | | Humanities Elective | 3 |
| | | Natural Science Elective | 3-4 |
| | | | 16-17 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| SOC | 241 | Urban Sociology | |
| | | or | 3 |
| SOC | 242 | Criminology | |
| ECO | 201 | Principles of Economics | 3 |
| PED | | Physical Education | 1 |
| | | Internship Option or Social Science Elective | 3 |
| | | General Core Elective | 3 |
| | | Natural Science Elective | 3-4 |
| | | | 16-17 |

## INDIVIDUAL STUDIES PROGRAM

The Individual Studies program is designed to give maximum flexibility in planning a course of study. A student who is unsure of his/her goals, is interested in personal enrichment, wishes to explore a very specialized technical career, or has other goals which do not fit any of the prescribed programs offered by the College, may wish to enroll in the Individual Studies program.

### OBJECTIVES

Upon completion of the Individual Studies Program the student will have achieved one or more of the following:

1. An awareness of his/her academic and manual skills, careers for which to prepare, and/or careers which are unsuitable.
2. Comprehensive knowledge of a subject of personal interest.
3. Technical skill in an area(s) of his/her own choosing as well as general knowledge of academic subjects for which a need is felt.
4. Entry-level job skills in a paraprofessional or technical area.
5. Completion of courses which are equivalent to those of a four-year program into which he/she intends to transfer.

### GRADUATION REQUIREMENTS

1. Successfully complete the general college graduation requirements for all Associate Degree Programs. (See pg. 119.)
2. Successfully complete a minimum of sixty (60) credit hours of Associate Degree level courses:
   a. The 60 credit hours must include 12 credits of General Education Core courses as specified below:

| | |
|---|---|
| Communications | 6 credits |
| Quantitative Concepts & Skills | 3 credits |
| Humanities OR Social Sciences OR Natural Science | 3-4 credits |

   b. Full-time students must complete four additional credits of Physical Education, bringing the total number of required credits to 64; part-time students may be exempted from this requirement.
3. Complete all placement testing required by the College. Students must demonstrate basic mastery of English, reading, and mathematics through placement testing or successful completion of appropriate courses designed to provide basic skills and competencies in these areas.
4. The student must have participated in a planned educational program of studies. This plan should be developed in conjunction with an advisor and be filed with the appropriate Division Director prior to the completion of eighteen (18) semester hours of credit.

### CURRICULUM POSSIBILITIES

Courses selected for inclusion in an individual studies program depend almost entirely upon the goal of the individual student. In consultation with an advisor, the student may select precisely those courses which best meet his/her needs and allow him/her to reach a chosen goal. However, it may take longer than two years for an individual to complete the courses desired because of scheduling conflicts. This is particularly true for laboratory or shop courses requiring large blocks of time.

### AN EXAMPLE OF A PLANNED INDIVIDUAL STUDIES PROGRAM

A person may wish to enroll in the Individual Studies program to prepare for a particular occupational specialty not regularly offered. For instance, a person who enjoys flower arranging and cooking might decide to develop their own business utilizing their skills. Some form of specialized catering, for example wedding catering, would be a possibility. Courses could be selected from areas of Food and Hospitality Management, Floriculture, Business, and related areas. One possible selection of 64 credits of course work follows:

**Food and Hospitality Management**
Quantity Food Preparation
Menu Planning & Cost Control
Purchasing, Storage & Sanitation
Hospitality Merchandising
Equipment & Layouts
Personnel Management, Work Simplification

**Floriculture**
Floral Design I
Floral Design II
Flower Shop Operation

**Business**
Principles of Business
Business Communications
Accounting I
Accounting II
Small Business Management
Business Mathematics

**Related**
Introduction to Mathematics I
English Composition I
English Composition II
Fundamentals of Chemistry
Physical Education

Another student with this same career goal might choose to emphasize one area more than another depending on interest and prior experience. For example, someone who had prepared food for many large parties in their own home might feel quite competent in the food area and wish to emphasize business courses. The exact combination of courses in the individual studies program is decided entirely by the individual, with the help of an advisor.

## Exam Preparation

### Engineer In Training (EIT) Exam Preparation

The Engineer in Training Program is a non-degree, non-certificate program. The purpose of the program is to prepare individuals, through a series of courses, to take the EIT examination. The EIT exam is one step in the process of being registered as a professional engineer in the State of Pennsylvania. These courses are open to anyone who desires to take the examination. Courses offered are:

| Course Title | Course Number |
|---|---|
| STATICS | EIT 201 |
| STRENGTH OF MATERIALS I | EIT 202 |
| DYNAMICS | EIT 203 |
| FLUID MECHANICS | EIT 204 |
| STRENGTH OF MATERIALS II | EIT 205 |
| ENGINEERING ECONOMICS | EIT 206 |
| ENGINEERING CHEMISTRY | EIT 207 |
| THERMODYNAMICS | EIT 208 |
| ENGINEERING PHYSICS | EIT 209 |
| ENGINEERING ELECTRONICS | EIT 210 |

### Real Estate Exam Preparation

To qualify to take the State Real Estate Commission's examination for a salesperson's license, a student needs the equivalent of four credits in real estate. Courses recommended for the sales license test are: Real Estate Principles, Real Estate Sales, and Real Estate Law (any two). The Commission will waive one of the two courses required for the sales license for any student who has a two-year or four-year degree. In order to take the examination for a broker's license, the student needs 16 credits in real estate.

The Business & Computer Science Division's real estate courses are listed below. Courses which meet the State Real Estate Commission's requirements for the salesperson's and broker's license are marked in the appropriate column.

| Course Title | Course No. | Cr. | Sales* | Broker** |
|---|---|---|---|---|
| Real Estate Principles I | RES 112 | 3 | x | x |
| Real Estate Law | RES 113 | 3 | x | x |
| Real Estate Appraisal | RES 114 | 3 | | x |
| Real Estate Sales | RES 115 | 3 | x | x |
| Real Estate Financing | RES 116 | 3 | x | x |
| Real Estate Management | RES 117 | 3 | | x |
| Real Estate Principles II | RES 212 | 3 | x | x |
| Real Estate Math | RES 119 | 3 | | x |
| Real Estate Taxes | RES 120 | 3 | | x |

*Four credits, or two courses, are required before examination for a salesperson's license can be taken. Any two of the five courses may be used to meet the requirements.

**Sixteen credits, or six courses, are required before the examination for a broker's license can be taken. Any six of the nine courses may be used to meet the requirement.

## Lewisburg Federal Penitentiary

### Building Technology and Estimating Program (BE) Special Certificate Program Lewisburg Federal Penitentiary

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| BCT | 513 | Buildings and Specifications | 3 |
| ARC | 114 | Building Materials & Methods I | 3 |
| ARC | 233 | Building Equipment I | 3 |
| CET | 113 | Introductory Surveying | 2 |
| MTH | 500 | Technical Mathematics II | 3 |
| | | | 14 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| BCT | 123 | Safety in Building Technology | 2 |
| BCT | 126 | Construction Job Management | 3 |
| BCT | 524 | Building Trades & Estimating | 3 |
| ARC | 232 | Building Materials & Methods II | 3 |
| ARC | 242 | Building Equipment II | 3 |
| | | Optional Elective | 0/3 |
| | | | 14/17 |

### Dental Laboratory Technician (DL) Special Program Associate Degree/Five Semesters Lewisburg Federal Penitentiary

FIRST SEMESTER

| | | | Credits |
|---|---|---|---|
| DLT | 111 | Introduction to Dental Technology | 5 |
| DLT | 112 | Dental Materials | 3 |
| ENL | 111 | English Composition I | 3 |
| MTH | 101 | Introduction to Mathematics I | 3 |
| | | | 14 |

SECOND SEMESTER

| | | | Credits |
|---|---|---|---|
| DLT | 121 | Denture Techniques I | 6 |
| DLT | 122 | Oral Anatomy | 3 |
| ENL | 121 | English Composition II | 3 |
| MTH | 102 | Introduction to Mathematics II | 3 |
| | | | 15 |

THIRD SEMESTER

| | | | Credits |
|---|---|---|---|
| DLT | 231 | Denture Techniques II | 6 |
| DLT | 232 | Odontography | 4 |
| | | Related Courses as available | 6 |
| | | | 16 |

FOURTH SEMESTER

| | | | Credits |
|---|---|---|---|
| DLT | 241 | Cast Partial Techniques I | 6 |
| DLT | 242 | Crown and Bridge I | 5 |
| | | Related Courses as available | 6 |
| | | | 17 |

FIFTH SEMESTER

| | | | Credits |
|---|---|---|---|
| DLT | 251 | Cast Partial Techniques II | 6 |
| DLT | 252 | Crown and Bridge II | 5 |
| | | | 11 |

## Food Service Management (FM)
## Special Certificate Program
## Lewisburg Federal Penitentiary

FIRST SEMESTER (16 weeks)

| | | | Credits |
|---|---|---|---|
| FHD | 112 | Nutrition | 3 |
| FHD | 125 | Menu Planning & Cost Control | 3 |
| FHD | 245 | Equipment and Layouts | 3 |
| ENL | 111 | English Composition I | 3 |
| | | | 12 |

SECOND SEMESTER (16 weeks)

| | | | Credits |
|---|---|---|---|
| FHD | 115 | Purchasing, Storage, and Sanitation | 3 |
| FHD | 235 | Personnel Management, Work Simplification | 3 |
| FHD | 246 | Hospitality Merchandising | 3 |
| ACC | 112 | Accounting I | 3 |
| | | | 12 |

## Heating and Air Conditioning (HA)
## Special Certificate Program
## Lewisburg Federal Penitentiary

The Heating and Air Conditioning program will instruct students in the skills necessary to design, install, and repair any type of residential or light commercial heating and air conditioning system.

**Types of Jobs:** Heating and air conditioning technician; service and repair person; equipment sales; owner and operator of business.

FALL SEMESTER

| | | | Credits |
|---|---|---|---|
| HAC | 711 | Heating and Air Conditioning I | 22 |
| MTH | 710 | Technical Mathematics I | 3 |
| | | | 25 |

SPRING SEMESTER

| | | | Credits |
|---|---|---|---|
| HAC | 721 | Heating and Air Conditioning II | 22 |
| ENL | 711 | Communications | 3 |
| | | | 25 |

SUMMER SEMESTER

| | | | Credits |
|---|---|---|---|
| HAC | 731 | Heating and Air Conditioning III | 22 |
| | | | 22 |

PROGRAM OBJECTIVES

The graduate of the Heating and Air Conditioning program should be able to:

1. service and repair all types of air conditioning and heating systems.
2. troubleshoot, identify, and correct problems in heating and air conditioning systems.
3. install complete residential or light commercial heating and/or air conditioning systems.
4. perform necessary repairs to heat pumps and solar equipment.
5. design and prepare heating and cooling load calculations, and properly select required equipment for installation.
6. use elementary math operations (addition, subtraction, multiplication, division) including decimals, fractions, and conversions as they apply to heating and air conditioning.
7. write technical reports, repair orders, estimates, purchase orders, and clear concise business letters. Maintain inventory, service records, and customer files.
8. demonstrate an attitude of responsibility toward installation, service, and repair of heating and air conditioning systems and a desire to enter the world of work.

## Small Engine Repair (SE)
## Special Certificate Program
## Lewisburg Federal Penitentiary

The goal of this program is to prepare students for successful careers as small engine mechanics for lawn mowers, marine, or snowmobile dealerships, or for self-operated businesses.

**Types of Jobs:** Small engine mechanic, shop management, factory training advisor, sales, owner/operator of repair shop.

COURSES

| | | | Credits |
|---|---|---|---|
| SER | 711 | Small Engine Repair | 14 |
| ENL | 711 | Communications | 3 |
| MTH | 710 | Technical Mathematics I | 3 |
| | | | 20 |

PROGRAM OBJECTIVES

The graduate of the Small Engine Repair program should be able to:

1. write clear, concise, legible, and accurate repair orders, estimates, memos, reports, resumes, and letters of application.
2. maintain service records and customer files.
3. identify the problems of a small engine repair shop, equipment, tools, and customer relations.
4. diagnose common small engine problems and make necessary repairs.
5. disassemble and reassemble various makes of small engines.
6. use elementary math operations (addition, subtraction, multiplication, division), including decimals, fractions, and conversions as they apply to small engine repair.
7. demonstrate an attitude of responsibility toward small engine repair and the world of work.

## COURSE DESCRIPTIONS

Courses are listed alphabetically under the name of the subject– Accounting, Advertising, Advertising Art, Agribusiness, Architectural Technology, Automotive, Aviation, Biology, etc.

The letters and numbers preceding the names of the courses are an identification code for recording purposes. Courses are designated by numbers as follows:

| Courses Numbered | Description |
|---|---|
| 001 - 099 | Developmental courses which may be required of students on the basis of placement tests. The College awards institutional credit for these courses. This credit will appear on the student's transcript and count in the Cumulative Grade Point Average. However, credits earned in courses numbered 001-099 may not replace any courses or electives required in a given program. |
| 100 - 299 | College-level courses applicable to Associate Degree programs. |
| 500 - 699 | Courses are applicable to Associate Degree and Certificate programs, with the exception of the General Studies program. |
| 700 - 899 | Courses applicable to Certificate programs. |

If a particular course has a prerequisite or corequisite, that fact is indicated in italics at the end of the course description.

The number immediately following the description of the course content indicates the number of credits received for the course. Within the parentheses, the number before the dash indicates lecture hours and the number after the dash indicates laboratory or shop hours.

**SPECIAL TOPICS COURSES: (1-5 credits)**

| | | |
|---|---|---|
| BTT | 299 | BUILDING TECHNOLOGIES |
| BCS | 299 | BUSINESS & COMPUTER SCIENCE |
| CHS | 299 | COMMUNICATIONS, HUMANITIES & SOCIAL SCIENCES |
| ESD | 299 | EARTH SCIENCE |
| EED | 299 | ELECTRIC/ELECTRONICS |
| EDT | 299 | ENGINEERING & DESIGN TECHNOLOGIES |
| MSH | 299 | MATHEMATICS, SCIENCE & ALLIED HEALTH |
| TTD | 299 | TRANSPORTATION TECHNOLOGIES |

**COURSE DESCRIPTION**

Special attention to particular abilities, interests of students,and particular topics. Individual guidance in advanced studies. Admission by permission of the instructor, Division Director, and Dean for Degree and Certificate Programs.

# A

## ACCOUNTING (ACC)

ACC 112
**ACCOUNTING I**
Introduction to elementary accounting principles. Includes the procedures, terms, theories, and practical applications of proprietorship accounting. Develops the foundation of accounting principles necessary for success in advanced courses and helps prepare the student for employment in business. 3 Cr. (3-0).

ACC 121
**ELEMENTARY ACCOUNTING**
Basic course in accounting for students majoring in Secretarial Science and non-business areas. Develops those accounting practices and theories which will prepare the student for employment in, or operation of, a sole proprietorship form of business. 3 Cr. (3-0).

ACC 122
**ACCOUNTING II**
Continues the development of accounting principles as applied to the different forms of business organization. Emphasizes corporate and partnership accounting. 3 Cr. (3-0). *Prerequisite: ACC 112 or Division permission.*

ACC 125
**INCOME TAX ACCOUNTING**
Familiarizes students with the different rules and regulations regarding Federal and Pennsylvania state income taxes. Tax deductions, credits, exemptions, rates, computation of all types of taxes, and the various forms that students should be familiar with are stressed. 3 Cr. (3-0).

ACC 230
**MANAGERIAL ACCOUNTING**
Presents the analysis tools needed to make decisions based on financial information. Emphasizes the organization of data for decisions, development of sound measurements, and the use of accounting for control and evaluation of economic activity. De-emphasizes the use of financial accounting using the transaction recording process. Course assumes the student has a thorough knowledge of accounting principles and is prepared to analyze the financial summarizations. 3 Cr. (3-0). *Prerequisite: ACC 122 or Division permission.*

ACC 231
**COST ACCOUNTING**
Includes transactions of a manufacturing business, finding unit costs, finding total cost after processing, and profit through distribution. Three types of cost accounting systems will be discussed in detail: Job Cost, Process Cost, and Standard Cost. 3 Cr. (3-0).
*Prerequisite: ACC 122 or Division permission.*

ACC 232
**INTERMEDIATE ACCOUNTING I**
Detailed in-depth study of financial statements and the fundamental accounting processes. Includes an examination of working capital. 3 Cr. (3-0). *Prerequisite: ACC 122 or Division permission.*

ACC 244
**INTERMEDIATE ACCOUNTING II**
Deals with noncurrent assets and liabilities, stockholders' equity, and various analytical accounting processes. 3 Cr. (3-0).
*Prerequisite: ACC 232 or Division permission.*

ACC 246
**AUDITING**
Offers a thorough knowledge of auditing through the application of principles and adherence to auditing standards. Internal controls, the field of auditing and public accounting, audit techniques, audit work papers, verification of accounts, reporting the audit and internal auditing are discussed. 3 Cr. (3-0). *Prerequisites: ACC 112, ACC 122.*

## ADVERTISING (ADV)

ADV 101
**PRINCIPLES OF ADVERTISING**
Survey spanning the historical perspective of American advertising and advertising in relation to the economy. Organization and management of advertising; its place in total marketing as well as retail and national advertising; sociological aspects; creative production. 3 Cr. (3-0).

## ADVERTISING ART (ART)

ART 111
**BASIC DRAWING**
The basic concepts of observing and perceiving objects in space and drawing them in various ways using a variety of techniques.
3 Cr. (1-6).

ART 121
**BASIC PAINTING**
An introduction to painting with emphasis on color, value, form, texture. Emphasis is placed on representational painting but experimentation is encouraged. 3 Cr. (1-6).

ART 231
**COLOR AND DESIGN**
Introduction to two dimensional design and color. Studies from nature and the properties of color, shape, form and space leading to the discovery of individual solutions to problems in two dimensional design. 3 Cr. (1-6).

ART 232
**LETTERING AND LAYOUT**
A study of the elements and design of layouts for advertising art. The history, anatomy and design of letters, emphasizing the proper use of lettering in advertising. 3 Cr. (1-6).

ART 241
**MEDIA AND TECHNIQUES**
Lecture and demonstrations illustrate and describe the various media and techniques used in advertising art, such as gouache, watercolor, wash, pastel, pen and ink, scratchboard, airbrush and art aids.
3 Cr. (1-6). *Prerequisite: Consultation with instructor.*

ART 242
**ADVERTISING DESIGN**
Projects in poster design, brochures, illustration and other forms of advertising and editorial media including basic techniques and processes in use in preparation of advertising and graphic art for the printer. The following skills are involved: illustration, paste-up, specifying type, overlays, lettering, and layout.
3 Cr. (1-6). *Prerequisite: Consultation with instructor.*

## AGRIBUSINESS (AGB)

AGB 111
**INTRODUCTION TO AGRICULTURAL BUSINESS**
An overview of the broad field of agribusiness, its operation, specialized areas, and their functions. Numerous field trips will be made to different types of agribusinesses and farms to provide the student with a first hand view of the industry to help him/her become oriented in the career goals of his/her choice. In addition, the student will develop a planned agribusiness internship/co-op experience.
4 Cr. (3-3).

AGB 112
**SOILS, FERTILIZER, AND AGRICULTURAL CHEMICALS**
The formation, physical, and biological properties of soil with special attention to soil conditions that affect crop production. Composition of fertilizer, its manufacture and use, including soil sampling, test report analysis, plant deficiencies, and the reactions of nutrients within plants. Types of chemicals and how to use and apply them properly.
4 Cr. (3-3).

AGB 123
**FIELD AND FORAGE CROP PRODUCTION**
A study of the basic principles related to the culture and production of grain crops and forage. 3 Cr. (2-3).

AGB 124
**AGRICULTURAL FINANCING**
The principles of financing applied to agribusiness. A look at the many sources of credit—private and governmental. Obtaining credit and its use. 3 Cr. (3-0).

AGB 125
**DAIRY PRODUCTION**
The feeding, management, breeding, milking, disease control, and housing of dairy cattle. 3 Cr. (2-3).

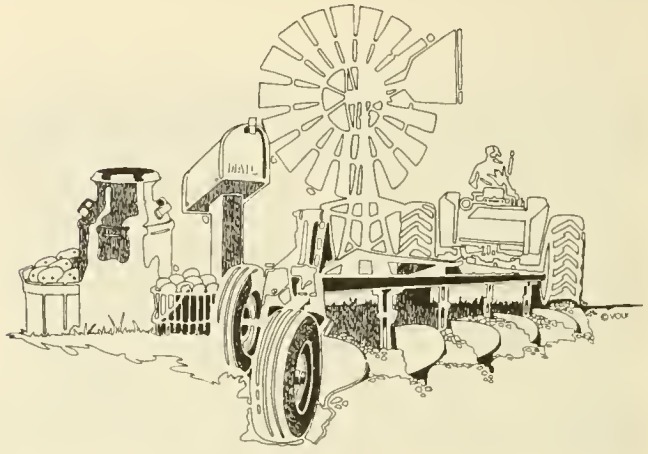
AGB 236
**ANIMAL PRODUCTION**
The basic practical management aspects of livestock production including beef, swine, sheep, and poultry. 4 Cr. (3-3).

AGB 237
**SPECIAL TOPICS IN AGRIBUSINESS**
Investigation and study individually and by the class in special topics related to the objectives of the Agribusiness program. Examples of topics: Conservation, Horticulture, and Forestry. 3 Cr. (2-3).

AGB 240
**INTERNSHIP/CO-OP**
Practical experience gained by a planned and supervised program of work with an agricultural business or farming enterprise. 3 Cr. 200 Hrs.

AGB 248
**FARM MANAGEMENT**
The fundamental principles of management and economics emphasizing their application to the farm. Farm records, their analysis and use in determining progress and farm planning. 3 Cr. (3-0).

AGB 249
**AGRICULTURAL SALES AND SERVICE**
An introduction to the factors involved in marketing, including the psychology of selling, pricing, and presenting the product. Supply and demand, new concepts in marketing, the relationship of customer service to growth. 3 Cr. (3-0).



## ARCHITECTURAL TECHNOLOGY (ARC)

ARC 102
**BASIC ARCHITECTURAL DRAFTING**
Fundamentals of architectural drawing for woodworking technology; use and care of drawing instruments and media, lettering, orthographic projection principles, preliminary drawing and sketching, preparation of working drawings, exterior and interior finish work, detailing cabinet and mill work. 3 Cr. (2-3).

ARC 111
**STATICS**
Algebraic and graphic determination of loads, reactions, shear and moment, deflection, loading and buckling, truss design, properties of areas. 3 Cr. (3-0).

ARC 112
**ARCHITECTURAL GRAPHICS I**
Basic architectural graphic media; projection drawings; axonometrics and perspective; color and texture; introduction to the architectural model; basic vocabulary of architectural drawings; composition, space, form, value, texture, shades, shadows. 4 Cr. (1-9).

ARC 113
**INTRO. HISTORIC THEORY IN ARCHITECTURE**
Introductory course in architecture giving an overview of the curriculum and its relation to the profession. Discussions of architectural employment and further architectural education. Surveys architectural ideas as an introduction to historical theory of building, planning, and urban development from the emergence of people to the present day. 3 Cr. (3-0).

ARC 114
**BUILDING MATERIALS AND METHODS I**
Study of typical materials of residential construction; their production, properties, use, performance in combinations. 3 Cr. (3-0).

ARC 121
**STRUCTURES I**
Theory and design of wood and timber; identification, characteristics and classifications of wood; working stresses; design and beams, columns, joints, rafters, planks, laminated sections; timber connections, fastenings and their working properties; laminated lumber, shapes. 2 Cr. (2-0).

ARC 122
**ARCHITECTURAL GRAPHICS II**
Architectural rendering in various media; black and white, color problems; emphasis on development of techniques, style, presentation. 3 Cr. (1-6).

ARC 123
**ARCHITECTURAL WORKING DRAWINGS**
Laboratory practice in producing a complete set of architectural working drawings; emphasis on preparation, technique, content, thoroughness, continuity, lettering, presentation quality. 2 Cr. (0-6).

ARC 124
**DESIGN I**
Fundamental relationships of function, space, time, light, human needs; introduction to the design process; collaborative work; emphasis on methods of work; presentation of architectural ideas by preliminary drawings; working drawings; models. 4 Cr. (1-9).

ARC 201
**ADVANCED DESIGN I**
Continuation of the design process; individual projects to develop student's ability to coordinate the design concept with construction. 4 Cr. (1-9).

ARC 202
**ADVANCED DESIGN II**
Continuation of ARC 201. 4 Cr. (1-9).

ARC 231
**STRUCTURES II**
Theory and design of steel beams, columns, and connections (welded, bolted and riveted) for moment, shear, slope, deflections, axial and eccentric loads; the AISC Handbook; bearing capacity of masonry walls, design of bearing plates, steel joints, space frames and trusses. 2 Cr. (2-0).

ARC 232
**BUILDING MATERIALS AND METHODS II**
Subsurface exploration and foundations, water and damp-proofing; methods and materials for construction of masonry, concrete walls, slabs; wall, floor, and roof systems; the curtain wall; fireproofing; building codes; architectural hardware.
3 Cr. (3-0). *Prerequisite: ARC 114.*

ARC 233
**BUILDING EQUIPMENT I**
Theory and design of plumbing, heating, air-conditioning, and control systems; sources and design of water supply; sanitary and storm systems; computation of plumbing, heating, and cooling loads.
3 Cr. (3-0).

ARC 234
**SITE PLANNING**
Theories, methods and equipment for the measurement of distances, angles, differences in elevation; theory of error; computations; adjustment of data; mapping application of surveying methods to construction, boundaries; emphasis on production and interpretation of maps for selection of sites, planning of subdivisions, preparation of master plans; examination of sites for building, elements of architectural earth sculpture, water, subsurface conditions, landscaping. 3 Cr. (2-3).

ARC 235
**DESIGN II**
Problems of differential space organizations; specialized spacial forms; relationship of space, form, structure, equipment, light; applications of elements of detailing; design of load bearing and curtain walls relating to total design; problems of tall buildings, building groups, associated site planning; architectural character and aesthetics; correlation of design with associated methods of construction; analysis, development of programs, collaborative work; advanced problems of form, visual expression; emphasis on methods of work; presentation of architectural ideas by preliminary drawings; working drawings; models.
4 Cr. (1-9). *Prerequisite: ARC 124.*

ARC 241
**STRUCTURES III**
Reinforced concrete building; theory and design of slabs, beams, compression steel, columns, prestressed concrete, footings, walls; floors; quantitative study of structural forms from the view of material development. 2 Cr. (2-0).

ARC 242
**BUILDING EQUIPMENT II**
Theory and design of electrical service distribution systems; selection of electrical equipment, fixtures; electrical heating design; theory and measurement of light, sound; vertical transportation systems; sound systems. 3 Cr. (3-0).

ARC 243
**DESIGN III**
Final course in design sequence; coordinates the design process with administrative procedures encountered in architectural practice. Emphasizes design and design development. Utilizes knowledge and skills acquired in previous and concurrent design and technical courses. Assigned problems emphasize quality and understanding, with a systematic, uniform approach used to develop and explain building technology. 4 Cr. (1-9).

ARC 244
**PROFESSIONAL ADMINISTRATION & CONTRACT DOCUMENTS**
Architectural registration, professional organization, ethics; forms of architectural service; contract law; bonds; liens; codes; insurance; bidding procedures; specification writing; supervision and administration of construction operation. 3 Cr. (3-0).

ARC 245
**SEMINAR**
Study of architectural ideas, theories, current problems; nature of architect as leader; human activity; relation to the human physical, social, intellectual and spiritual nature; influence of tradition, science, technology. 3 Cr. (3-0).

## AUTOMOTIVE (ABC, AMC, AMD)

ABC 711
**BASIC AUTO BODY (8 weeks)**
Basic theory and practice in trade fundamentals; body and chassis work; sanding, masking. 6 Cr. (6-18).

ABC 712
**METAL WORK (8 weeks)**
Metal work; gas and electric welding; stretching and shrinkage of metal; fasteners; riveting. 6 Cr. (6-18).

ABC 721
**RECONDITIONING AND TRIM WORK (8 weeks)**
Reconditioning; trim work. 6 Cr. (6-18).
*Prerequisites: ABC 711, ABC 712.*

ABC 722
**PANEL INSTALLATION (8 weeks)**
Panel installation and alignment; front and rear suspension and alignment, frame alignment. 6 Cr. (6-18). *Prerequisite: ABC 721.*

ABC 831
**METAL WORK AND FILLING (8 weeks)**
Metal work and filling; color requirements. 6 Cr. (6-18).
*Prerequisites: ABC 711, ABC 712, ABC 721, ABC 722.*

ABC 832
**PAINTING (8 weeks)**
Spray painting; working "totals." 6 Cr. (6-18). *Prerequisite: ABC 831.*

ABC 841
**TOOLS, EQUIPMENT AND ESTIMATING (8 weeks)**
Trade tools, equipment, and damage estimates. 6 Cr. (6-18).
*Prerequisites: ABC 711, ABC 712, ABC 721, ABC 722, ABC 831, ABC 832.*

ABC 842
**PAINTING AND ESTIMATING (8 weeks)**
Painting and estimating. 6 Cr. (6-18). *Prerequisite: ABC 841.*

AMC 713
**POWER TRAIN - STANDARD (8 weeks)**
Theory of operation of standard transmissions, clutches, differentials. Rebuild procedures of selected standard transmissions, differentials, and trans axles. Minor service on universal joints and rear axles. Introduction to automatic transmissions. 6 Cr. (6-18).

AMC 714
**BRAKES AND SUSPENSION (8 weeks)**
Theory of hydraulics, braking action, suspension systems, wheel alignment, and balance. Steering gears and geometry. Diagnosis and repair procedures for brake and suspension systems. 6 Cr. (6-18).

AMC 723
**ELECTRIC AND FUEL (8 weeks)**
Basic theory of electricity. Operation and service of ignition, charging, cranking, and lighting circuits. Use of electronic testing equipment, operation and service of emission control systems, and fuel system components. 7 Cr. (9-15).

AMC 724
**BASIC ENGINES (8 weeks)**
Theory of internal combustion heat engines. Engine service procedures. Fundamentals of tune-up. Cooling system service. Introduction to air conditioning. 6 Cr. (6-18).

AMC 843
**VEHICLE PERFORMANCE ANALYSIS**
Diagnosis of engine problems and selected repairs. Exhaust emission diagnosis, adjustment, and selected repairs. Troubleshooting common electrical malfunctions. Wheel alignment and balance. 12 Cr. (6-18). *Prerequisites: AMC 713, AMC 714, AMC 723, AMC 724.*

AMD 113
**FUEL AND ELECTRICAL (8 weeks)**
Basic theory of electricity. Operation and service of ignition, charging, and lighting circuits. Use of electronic testing equipment, operation and service of emission control systems, and fuel system components. 5 Cr. (6-12).

AMD 114
**ENGINES (8 weeks)**
Theory of internal combustion heat engines. Engine service procedures. Fundamentals of tune-up and cooling system service. Introduction to air conditioning. 5 Cr. (6-12).

AMD 123
**STANDARD POWER TRAIN (8 weeks)**
Theory of operation of standard transmissions, clutches, differentials. Rebuild procedures of selected standard transmissions, differentials, and trans axles. Minor service of universal joints, rear axles. Introduction to automatic transmissions. 5 Cr. (6-12).

AMD 124
**BRAKES, CHASSIS, AND SUSPENSION (8 weeks)**
Theory of hydraulics, braking action, suspension systems, wheel alignment, and balance. Steering gears and geometry. Diagnosis and repair procedures for brake and suspension systems. 5 Cr. (6-12).

AMD 232
**SERVICE PROCEDURES**
Engine performance analysis, diagnosis of engine problems, and selected repair. Exhaust emission diagnosis, adjustment, and selected repairs. Troubleshooting common electrical malfunctions. Wheel alignment and balance. Service management techniques. 11 Cr. (5-18). *Prerequisites: AMD 113, AMD 114, AMD 123, AMD 124.*

AMD 634
**STATE INSPECTION REPAIRS (8 weeks)**
Study of State Inspection Code Manual. (Demonstrations and application of checking procedures to actual work, and emphasis on repair procedures.) Minor service of power train. 6 Cr. (7-15). *Prerequisites: AMD 113, AMD 114, AMD 123, AMD 124 or AMC 713, AMC 714, AMC 723, AMC 724.*

AMD 635
**AUTOMATIC TRANSMISSION REPAIR (8 weeks)**
Automatic transmission diagnosis, linkage adjustment, and rebuild procedures on selected automatic transmissions. 6 Cr. (7-15). *Prerequisites: AMD 113, AMD 114, AMD 123, AMD 124 or AMC 713, AMC 714, AMC 723, AMC 724.*

AMD 636
**AIR CONDITIONING (8 weeks)**
Air conditioning service. Theory, operation, diagnosis, and repair of selected air conditioning units as applied to automotive vehicles. 6 Cr. (7-15). *Prerequisites: AMD 113, AMD 114, AMD 123, AMD 124 or AMC 713, AMC 714, AMC 723, AMC 724.*

AMD 637
**ENGINE OVERHAUL (8 weeks)**
Fundamentals of engines, with emphasis on diagnosis and repair techniques. Basic service and repair procedures as applied to engine overhaul. 6 Cr. (7-15). *Prerequisites: AMD 113, AMD 114, AMD 123, AMD 124 or AMC 713, AMC 714, AMC 723, AMC 724.*

## AVIATION (APC)

Lecture and lab hours are shown per semester, not per week.

APC 711
**GENERAL AIRFRAME AND POWERPLANT**
Basic concepts of aircraft, powerplant, aircraft systems maintenance; aircraft, powerplant nomenclature; theory of operation, weight, balance; blueprint reading; mechanics privileges, limitations; publications, aircraft forms. 13 Cr. (159-169).

APC 712
**POWERPLANT I**
Basic theory and operating principles of aircraft gas turbine engines. 3 Cr. (35-45).

APC 721
**POWERPLANT II**
Basic operating principles and theories of aircraft reciprocating engines, fuel metering systems, engine fuel system, aircraft propellers, ignition and exhaust systems. Maintenance, inspection, and troubleshooting techniques of the above mentioned systems are also included in the course. 17 Cr. (176-304).
*Prerequisites: APC 711, APC 712.*

APC 831
**POWERPLANT III**
Basic theories and operating principles of aircraft engine lubrication, cooling, instrument, fire protection, and electrical systems. Maintenance, inspection and troubleshooting techniques of the above mentioned systems are also included in the course. 9 Cr. (119-91).
*Prerequisites: APC 711, APC 712, APC 721.*

APC 832
**AIRFRAME I**
Basic operating principles and theories of aircraft airframe construction and repairs, as applicable to electrical systems, aircraft fabrics and refinishing, rigging and assembly, welding and inspection of the airframe. 10 Cr. (108-162). *Prerequisites: APC 711, APC 712, APC 721, APC 831.*

APC 841
**AIRFRAME II**
Basic operating principles and theories of aircraft airframe construction and repairs as applicable to wood and sheet metal structure, instrument, hydraulics, pneumatics, landing gear, fuel, navigation, air conditioning, pressurization and fire protection systems.
20 Cr. (229-251). *Prerequisites: APC 711, APC 712, APC 721, APC 831, APC 832.*

# B

## BIOLOGY (BIO)

BIO 110
**APPLIED HUMAN PHYSIOLOGY**
Study of human physiology and anatomy, cells, tissues, and tumors, digestive, excretory, cardiovascular, endocrine, and other body systems as time permits; diseases and immunology. 3 Cr. (3-0).

BIO 111
**BASIC BOTANY (HORTICULTURE)**
Fundamentals of plant science, plant anatomy, physiology, taxonomy, reproduction, and genetics. 3 Cr. (2-3).

BIO 113
**GENERAL BIOLOGY I**
Fundamental processes of living organisms. Main concepts of biology beginning with considerations of the chemical basis of life. Structure, function, and evolution of cells. 4 Cr. (3-3).

BIO 115
**HUMAN ANATOMY AND PHYSIOLOGY I**
A medically oriented study of the structure and function of the human body. Intended for students specializing in nursing, medical technology, and biology. Lecture and laboratory. 4 Cr. (3-3).

BIO 121
**BASIC ANATOMY AND PHYSIOLOGY**
Study of human anatomy and physiology; cells, tissues, and tumors; nervous, excretory, reproductive and endocrine systems; diseases; principles of chemistry; microbiology; and physics. Designed for students needing a one course basic background in anatomy and physiology (e.g., Secretarial Science—Medical) 3 Cr. (3-0).

BIO 123
**GENERAL BIOLOGY II**
Continuation of BIO 113. Structure, function, interrelationships, and evolution of organisms. 4 Cr. (3-3). *Prerequisite: BIO 113 or permission of the instructor.*

BIO 125
**HUMAN ANATOMY AND PHYSIOLOGY II**
Continuation of BIO 115. 4 Cr. (3-3). *Prerequisite: BIO 115.*

BIO 201
**MICROBIOLOGY**
Biology of microorganisms including bacteria, rickettsiae, viruses, fungi, protozoa, and helminths. Relationships between microorganisms and higher forms of life. 4 Cr. (3-3). *Prerequisite: BIO 123.*

BIO 203
**GENERAL BOTANY**
Introduction to plant physiology, plant life cycles, and plant taxonomy. 4 Cr. (3-3). *Prerequisite: BIO 123.*

BIO 208
**ECOLOGY**
Includes the basic principles of the relationships of plants and animals to their environments. Physical factors, energy and chemical cycles in the ecosystem, population and community characteristics, ecological succession, aquatic and terrestrial ecology. Local terrestrial and aquatic environments. 4 Cr. (3-3). *Prerequisite: One semester of college level biology.*

BIO 290
**SPECIAL STUDIES IN BIOLOGY**
Special attention to particular abilities and interests of students. Individual guidance in advanced studies. Admission by permission of the instructor. (1-3, laboratory as required).

## BROADCASTING (BRC)

BRC 110
**INTRODUCTION TO BROADCASTING**
In-depth study of broadcasting industry, its personnel, its history, its current status and its future. The student will evolve his/her own potential position in industry by brief hands-on previews of functions performed in various broadcast station positions. 3 Cr. (3-0).

BRC 115
**TECHNICAL COMMERCIAL RADIO OPERATION**
A broad survey of basic electronic theory prepares the student to understand the functions of broadcasting equipment. Equipment is demonstrated. Legal responsibilities required by FCC relating to equipment operation are explained. 3 Cr. (3-0).

BRC 123
**NEWS WRITING FOR RADIO**
Fundamentals of English grammar are reviewed. News gathering and writing are practiced. The unique peculiarities of electronic news writing are demonstrated and practiced. 3 Cr. (3-0).

BRC 125
**INTRODUCTION TO RADIO STATION OPERATION**
The student, as a member of the class, will operate the WACC radio station. He/she must announce and may perform other functions also, such as business or administrative. 3 Cr. (1-6).

BRC 233
**ANNOUNCING TECHNIQUES**
Human communications is examined. American General Speech is demonstrated and practiced. Forms of announcing are evaluated and practiced including: general, news, commercial, sports, interviewing, music, and talk shows. 3 Cr. (3-0).

BRC 235
**RADIO STATION OPERATION AND MANAGEMENT**
Continuation of BRC 125, hands-on operation of College station by students. Increased practice in business, sales, production and administration is mandated. Students required to perform functions. 3 Cr. (1-6). *Prerequisite: BRC 125.*

BRC 241
**SURVEY OF RADIO INDUSTRY**
History of radio, as background, is appraised. Philosophical concepts of American and foreign broadcasting are evaluated. U.S. governmental regulations are demonstrated. Current practices in industry are shown as they were evolved and used. 2 Cr. (2-0).

BRC 242
**COMMUNITY ASPECTS OF BROADCASTING**
Broadcast facilities as forms of community life, over and above entertainment, information, or business, are demonstrated. The operation of the facility as an integrated part of community life is practiced. The student's place in this community picture is evaluated. Individual employment possibilities are literally implemented. 3 Cr. (3-0).

## BUSINESS MANAGEMENT (MGT)

MGT 110
**PRINCIPLES OF BUSINESS**
Introduction to the various types of business organizations, from a legal as well as administrative viewpoint. Emphasizes terminology as it is applied in business fields such as economics, finance, marketing, and business law. Includes basic concepts of management from the establishment of objectives through planning, organizing, policy formulation, taking action, measuring and evaluating, and performance improvement. 3 Cr. (3-0).

MGT 111
**BUSINESS MATHEMATICS**
Fundamentals of mathematics as applied to addition, subtraction, multiplication, and division; the use of percent, interest, depreciation and installment buying as used in the modern business world. 3 Cr. (3-0).

MGT 124
**OFFICE PROCEDURES**
Filing, telephone, and the physical arrangement and equipment of the office. Instruction and practice in the operation of ten-key, full-keyboard adding-listing, rotary, electronic, and key-driven calculators, as well as duplicating, dictating and transcribing equipment are included. 2 Cr. (1-3).

MGT 125
**FINANCE**
Introduction to basic principles of finance. Includes the monetary and credit system, long and short-term business financing, agricultural, consumer, and international financing. Examines the background of early monetary standards and the weaknesses of the various systems. 3 Cr. (3-0).

MGT 230
**BUSINESS COMMUNICATIONS**
Application of communications skills; listening, reading, writing, and speaking accurately, briefly, and clearly. Students are trained to write all types of business communications. Includes the techniques of personal and interpersonal relationships that will enable the student to perform well and to advance in a career. 3 Cr. (3-0).

MGT 231
**BUSINESS LAW I**
Introduction to the judicial process, the social implications of law, the roles of government and labor unions in the formulation of business laws. In-depth study of rights and obligations as they apply to contract law. 3 Cr. (3-0).

MGT 235
**BUSINESS PSYCHOLOGY**
Psychological principles as applied to modern business. Encourages the proper attitudes toward work, toward people, and toward personal habits that will make the student aware of human relation skills needed to be an efficient employee and an effective leader, both on and off the job. 3 Cr. (3-0).

MGT 237
**BANKING AND INVESTMENTS**
Introduction to banking and investments. Explains how institutions can best meet the needs of society. Provides a foundation for understanding how banks operate today, and why and how they have evolved to their present state. 3 Cr. (3-0).

MGT 238
**INSURANCE**
Structure and practices of the insurance field. Various types of insurance policies and their uses and importance for personal and business success are stressed. 3 Cr. (3-0).

MGT 239
**REAL ESTATE**
Introduction to the field of real estate. Emphasizes the legal aspects of real property ownership and lease arrangements and the instruments commonly used in property transactions. Includes the functions and procedures of the real estate broker. 3 Cr. (3-0).

MGT 241
**BUSINESS LAW II**
Incorporates the objectives of Business Law I and provides an in-depth study of the laws of agency and employment relation, commercial paper, personal property, bailments, and sales. 3 Cr. (3-0). *Prerequisite: MGT 231.*

MGT 242
**RETAILING**
Familiarizes the student with the field of retailing. Provides the technical and theoretical knowledge necessary for retail management employment. 3 Cr. (3-0).

MGT 243
**SALES**
Examines the positive role personal selling plays in the U.S. economy and documents the extent to which selling has aided our economic growth. Designed to show the role of sales in helping customers recognize and satisfy wants and needs. 3 Cr. (3-0).

MGT 247
**SMALL BUSINESS MANAGEMENT**
Introduction to the problems of owning and operating a business of one's own. Necessary personal characteristics, problems involved in buying and initiating a new business, and the activities of management are covered. 3 Cr. (3-0).

MGT 248
**SUPERVISION AND HUMAN RELATIONS**
Duties and responsibilities of the first-line supervisor and manager who holds up to a middle-level management position are studied from a behavioral point of view and in relation to how he/she influences others to accomplish organizational goals. Includes motivation, job enrichment; rules of leadership, and interpersonal relationships. 3 Cr. (3-0). *Prerequisite: MGT 110 or Division permission.*

# C

## CARPENTRY (BCT & CNC)

BCT 111
**WOODWORKING FOR CARPENTERS**
Basic principles and skills of hand and machine woodworking operations; special projects. 4 Cr. (2-6).

BCT 112
**CONSTRUCTION CARPENTRY**
Basic principles of frame construction: foundations and concrete formwork, types of building frames, strength of beams and girders, structural sheathing and house details; ideas and trends in construction methods and techniques. 4 Cr. (2-6).

BCT 121
**ESTIMATING AND BLUEPRINTS**
Introduction; types of drawings; lines, marks, symbols, conventions, scales, dimensions; quantities of material and cost estimating. 2 Cr. (2-0).

BCT 122
**BLOCK CONSTRUCTION**
Block laying skills in lab; practical work; classroom instruction covering materials used, types and sizes of blocks, principles of cost estimation. 6 Cr. (2-12).

BCT 123
**SAFETY IN BUILDING TECHNOLOGY**
The purpose of this course is to introduce students to an overview of laws and regulations concerning building construction safety with emphasis on OSHA, safe techniques, supervision and communication. 2 Cr. (2-0).

BCT 126
**CONSTRUCTION JOB MANAGEMENT**
The purpose of this course is to introduce the student to the complexity of the building construction industry, the interrelationships of the various trades, and the methods of communication and coordination among all trades and professions within the industry. 3 Cr. (3-0).

BCT 231
**ROOF-FRAMING THEORY**
Principles of rafter layout, use of framing square, problems of roof framing and construction, types of roofs and rafters. 3 Cr. (3-0).

BCT 232
**BRICK CONSTRUCTION**
Laying various patterns of brick to meet industrial standards with speed and accuracy; following architect's drawings; chimney, fireplace and wall projects. 5 Cr. (2-9).

BCT 241
**ADVANCED CARPENTRY**
Advanced woodworking techniques and fundamentals of finished carpentry; modern finishing materials; methods of application; exterior and interior trim; millwork, cornice work, roofing, siding, frame for openings, interior wall and ceiling material; trim and moldings; built-in cabinet work; stairbuilding; school sponsored construction work. 4 Cr. (2-6).

BCT 242
**BUILDING CONSTRUCTION TECHNOLOGY**
Advanced technical aspects of building construction, solution of practical problems; special advanced projects, campus construction work including house construction projects. 6 Cr. (3-9).

BCT 243
**CONCRETE CONSTRUCTION**
Principles of concrete design, water-cement ratio, proportions of ingredients, reinforced concrete, study of concrete footers and walls, finishing with hand and power trowel equipment, proper methods of curing and testing. 3 Cr. (2-3).

BCT 513
**BUILDINGS AND SPECIFICATIONS**
Develops techniques in reading and interpretation of blueprints and specifications. Instruction in reading plan views, elevations, and details as typical of working drawings. Reviews the math principles involved in understanding and using these drawings. Stresses specifications and their relationship to the working drawings. 3 Cr. (3-0).

BCT 524
**BUILDING TRADES & ESTIMATING**
Study of processes and procedures gives working knowledge of various trades and shows how realistic construction costs are obtained for completed projects. Includes both residential and commercial estimating with the emphasis on types of estimates and quantity take-offs. 3 Cr. (3-0).

CNC 711
**SURVEYING, LAYOUT & BLUEPRINT READING (8 weeks)**
Interpretation of building codes, specifications, and blueprints; types and erection of batter boards; use, care and operation of builders level, simple surveys, 3-4-5 triangle calculations; determination of depth of excavation. 2 Cr. (3-3).

CNC 712
**CONCRETE AND BLOCK (8 weeks)**
Study and application of methods and materials used in laying out and building block and concrete walls; principles used in forming, pouring and finishing concrete footings, reinforced concrete and concrete slabs. Appropriate tools are introduced and instruction in their proper use and care is offered. 4 Cr. (3-16).

CNC 713
**BRICK AND STONE (8 weeks)**
Study of brick and stone products currently used in construction, with emphasis on common methods within the shop, and, when possible, through permanent projects outside the shop. 6 Cr. (6-19).

CNC 721
**FRAMING AND SHEATHING (8 weeks)**
Principles and applications of framing and sheathing through shop and outside projects. Emphasizes new and traditional materials used in this phase of construction. 6 Cr. (6-19).

CNC 722
**EXTERIOR FINISH (8 weeks)**
Develops skills in the selection and use of siding and roofing materials. Offers experience in door and window framing, exterior trim, cornice work, insulation materials and methods. 6 Cr. (6-19).

CNC 831
**INTERIOR FINISH (8 weeks)**
Instruction in the selection and application of materials used for interior walls, ceilings and floors. Opportunity for the student to use these materials, and the tools associated with them, through shop and permanent installations. 6 Cr. (6-16).

CNC 832
**INTERIOR TRIM (8 weeks)**
Presents a broad area of building construction, including door hanging, moldings and trim, built-in features, stair building and kitchen cabinets. Offers the student a wide range of information and, when possible, provides experience in the use of the methods and materials studied. 6 Cr. (6-16).

CNC 833
**BLUEPRINTS AND SPECIFICATIONS**
Develops techniques in reading and interpretation of blueprints and specifications. Instruction in reading plan views, elevations, and details as typical of working drawings. Reviews the math principles involved in understanding and using these drawings. Stresses specifications and their relationship to the working drawings. 3 Cr. (3-0).
*Prerequisites: CNC 712, CNC 713, CNC 721, CNC 722.*

CNC 841
**SPECIALTY AND RELATED TRADES (8 weeks)**
Surveys specialty and related trade areas, from wall and floor coverings through fundamental electrical wiring and plumbing and heating. Instruction and practical experience. 4 Cr. (3-16).

CNC 842
**PRACTICAL CONSTRUCTION EXPERIENCE (8 weeks)**
Utilization of the knowledge and skills acquired in the construction curriculum. Supervised permanent projects on and around campus are used as an instructional vehicle. When practical, the student participates in all stages of the project from planning through construction. 4 Cr. (1-18).

CNC 843
**BUILDING TRADES ESTIMATING (8 weeks)**
Study of processes and procedures gives working knowledge of various trades and shows how realistic construction costs are obtained for completed projects. Includes both residential and commercial estimating with the emphasis on types of estimates and quantity take-offs. 3 Cr. (6-0). *Prerequisite: CNC 833.*

CNC 844
**PERSONAL AND JOB ORIENTATION (8 weeks)**
Introduction to practical techniques in self-evaluation stressing the importance of values, interests, personality, and attitude in determining work success. Emphasis on establishing realistic work goals and expectations based on the student's self-knowledge. Surveys problems the beginning worker faces preparing to take his/her place in the world of work. Methods and techniques of gaining and maintaining employment are discussed in detail. 3 Cr. (6-0).

## CHEMISTRY (CHM)

CHM 100
**FUNDAMENTALS OF CHEMISTRY**
Introductory treatment of basic concepts of inorganic and organic chemistry. Essentially non-mathematical. Intended for the student who has never had chemistry or whose background is very weak. Prepares the student for CHM 105 or CHM 111. 4 Cr. (3-3).

CHM 105
**GENERAL ORGANIC CHEMISTRY**
Basic introduction to the major classes of organic compounds, including brief review of some inorganic concepts as related to organic reactions. Intended for non-science students desiring to fulfill a lab science requirement and for science students as a preliminary introduction to CHM 203. 4 Cr. (3-3). *Prerequisites: High school chemistry or permission of the instructor.*

CHM 107
**GENERAL ORGANIC CHEMISTRY**
Basic introduction to the major classes of organic compounds, including brief review of some inorganic concepts as related to organic reactions. 3 Cr. (3-0). Cannot be used to satisfy lab science requirements. *Prerequisites: High school chemistry or permission of the instructor.*

CHM 111
**GENERAL CHEMISTRY I**
Principles of modern chemistry with emphasis on inorganic aspects. Intended for science majors and non-science students desiring to fulfill lab science requirement. Prepares the student to continue into CHM 121 or CHM 203. 4 Cr. (3-3). *Prerequisites: High school algebra or equivalent; high school chemistry desirable but not required.*

CHM 121
**GENERAL CHEMISTRY II**
Continuation of CHM 111. Intended for science majors and non-science students desiring to fulfill a lab science requirement; the latter may desire to elect CHM 105 instead. 4 Cr. (3-3). *Prerequisites: CHM 111 or high school chemistry with permission of the instructor.*

CHM 203
**ORGANIC CHEMISTRY I**
Study of the major classes of organic compounds with emphasis on molecular structure and reaction mechanisms. Intended for science majors. 4 Cr. (3-3). *Prerequisites: CHM 105, or CHM 111, or high school chemistry with permission of the instructor.*

CHM 204
**ORGANIC CHEMISTRY II**
Continuation of CHM 203. 4 Cr. (3-3). *Prerequisites: CHM 203 or equivalent.*

CHM 290
**SPECIAL TOPICS IN CHEMISTRY**
A flexible course intended to meet special needs or interests of science or non-science students. Lectures may be supplemented with lab work as needed. 1 to 4 Cr. *Prerequisite: Permission of the instructor.*

## CIVIL ENGINEERING TECHNOLOGY (CET)

CET 111
**MATERIALS OF CONSTRUCTION**
Properties of concrete, aggregates, asphalt, steel, wood, plastics, clay products and miscellaneous construction materials; methods of testing and sampling construction materials; application of data on materials to design of structure. 2 Cr. (2-0).

CET 112
**ENGINEERING DRAWING**
Use of instruments; lettering, geometric constructions; orthographic projection; dimensioning; sketching. Architectural drawing including plans, elevations, details, and site plans. Structural drawing including uses and detailing for wood, concrete, and steel structures. 3 Cr. (1-6).

CET 113
**INTRODUCTORY SURVEYING**
Introduction to surveying; use and care of instruments; simple surveys with compass, transit, level, and tape. 2 Cr. (1-3).

CET 121
**PLANE SURVEYING**
Theory and practice of plane surveying; traverses and elementary triangulation; differential and reciprocal leveling; stadia and construction surveys; plane table surveys. 4 Cr. (1-9).
*Prerequisites: CET 113, MTH 103; Corequisite: MTH 104.*

CET 122
**TOPOGRAPHIC DRAWING & CARTOGRAPHY**
Use of conventional signs in mapping, the construction of large-scale topographic maps, logical contouring, photographic interpretation. Methods of plotting, use and construction of small scale maps, earth's coordinate system, map projections, enlargement and reduction of maps, scribing techniques, photographic color separation, typography, reproduction, and processing. 3 Cr. (1-6). *Prerequisite: CET 112.*

CET 231
**ROUTE SURVEYING**
Highway curves (horizontal and vertical); plus and offset; X-sections; field astronomy; route location. 4 Cr. (1-9). *Prerequisites: CET 121, MTH 104.*

CET 232
**ORIGIN, DISTRIBUTION & BEHAVIOR OF SOILS**
Geologic origin of soils; minerals, rocks, rock structures, weathering, glaciation, erosion and deposition. Distribution of soils in North America; residual, glacial and water-wind deposited soils. Soil characteristics and behavior; engineering classification, volume-weight relationships, physical properties, supporting capabilities for foundation elements and sampling methods. 3 Cr. (2-3). *Prerequisite: MTH 104; Corequisite: PHS 100.*

CET 233
**STATICS**
Basic principles of statics; coplanar and non-coplanar force systems; friction; centroids and moments of inertia; hydrostatic pressures and loads. 3 Cr. (3-1). *Prerequisite: MTH 104.*

CET 234
**HIGHWAY ENGINEERING TECHNOLOGY**
Highway economy, highway characteristics, drainage and structures, super-elevation, roadway construction, concrete-mix design, hydrology (precipitation and run-off), mass diagram, contracts and specifications. 3 Cr. (3-0). *Corequisite: CET 231.*

CET 241
**ADVANCED SURVEYING**
Theory and practice of boundary surveys; city surveys; mine surveys; hydrographic surveys and steam gaging; bridge surveys; survey control, and state coordinate systems; public land surveys; precise leveling and triangulation. 3 Cr. (2-3). *Prerequisite: CET 231.*

CET 242
**FLUID MECHANICS**
Mechanics of fluids; fluid flow in conduits and around bodies; liquid flow in open channels; friction and energy loss; fluid measurements; similitude and dimensional analysis. 3 Cr. (2-3). *Prerequisites: PHS 100, CET 233.*

CET 243
**STRENGTH OF MATERIALS**
Engineering materials and properties; shear and moments in beams; stresses in beams; design of beams; deflection of beams; columns. 3 Cr. (3-0). *Prerequisite: CET 233.*

CET 244
**PHOTOGRAMMETRY**
Use and application of aerial photographs; mapping by photogrammetric methods; geometry of aerial photographs; stereoscopy; overlapping aerial photographs; aerial triangulation; flight planning; cost estimation; contracts and specifications; remote sensing. 3 Cr. (2-3). *Prerequisites: CET 122, MTH 104.*

## COMPUTER OPERATOR (COP)

COP 713
**COMPUTER OPERATIONS I**
This course is designed as an introduction to the operation of equipment found in computer installations. Topics include mounting tapes and disc packs, operating CRT's, line printers, console typewriters, card readers, keypunch machines, data recorders, card sorters, other unit record devices, forms handling equipment, electronic calculators, and duplicating machines. 6 Cr. (3-9).

COP 723
**COMPUTER OPERATIONS II**
This course is designed to train the student in both the non-physical and physical aspects of data processing operations. An emphasis is placed on software operations, the use of EDP manuals, and the actual functioning of a computer center. Other topics are features of computer hardware, disc and tape processing, and recovery techniques for hardware and software errors. 4 Cr. (3-3). *Prerequisite: COP 713.*

COP 724
**COMPUTER OPERATIONS INTERNSHIP**
This course is designed to provide the student with practical experience in computer operations by assignment to a computer installation. The student will receive on-the-job training in the WACC computer center and/or various industrial locations. 2 Cr. (0-6). *Prerequisite: COP 713.*

## COMPUTER SCIENCE (CSC)

CSC 100
**FORTRAN IV PROGRAMMING**
Concepts of data processing systems, methods and applications; programming languages and program structures; FORTRAN IV programming language problem analysis, flow-charting and computer solution of numerical and non-numerical problems. 3 Cr. (3-0).

CSC 118
**FUNDAMENTALS OF COMPUTER SCIENCE**
Introduction to the field of computer science. Specific topics covered include communication with a computer through use of a Cathode Ray Tube, punch card equipment, records and files, concepts of computer systems, logic and problem solving techniques, flowcharts, data representation, and an overview of selected programming languages with an emphasis on BASIC Programming Language. 3 Cr. (3-0).

CSC 119
**RPG PROGRAMMING I**
Beginning course in REPORT PROGRAM GENERATOR Programming. Includes writing, compiling, and executing RPG programs. The programs written for this course will be based on business applications and business-oriented problems. 3 Cr. (3-0).

CSC 120
**BUSINESS COMPUTER APPLICATIONS**
This course emphasizes the use of the computer in typical business applications by concentrating on the use of computer-based information systems to provide information for effective management decision making. Includes data base concepts, data entry, man-machine interaction, and data retrieval concepts. 3 Cr. (3-0). *Prerequisite: CSC 118.*

CSC 127
**ASSEMBLER LANGUAGE PROGRAMMING**
A beginning course in basic assembler language. Includes such topics as data representation, instructions, coding, problem analysis, flowcharting, program writing, execution, debugging, documentation, job control and operating systems. 4 Cr. (4-0). *Prerequisite: CSC 118.*

CSC 128
**COBOL PROGRAMMING I**
Covers the COBOL computer language, language elements and division, program writing, execution, diagnostics, advanced programming concepts and techniques. Stresses documentation, including a written problem statement, any required formula development, printer spacing chart layouts with appropriate terminology for programming, card/tape and/or disc record layout, internal memory requirements, and a program flowchart. 3 Cr. (3-0). *Prerequisite: CSC 118.*

CSC 234
**FORTRAN AND LINEAR PROGRAMMING**
Designed to introduce the student to FORTRAN language programming as applied to business and mathematics problems. Topics include subprograms, table handling, linear programming, use of the plotter to draw graphs, and utilization of magnetic tape and disc. 3 Cr. (3-0).
*Prerequisites: CSC 118 and a programming language.*

CSC 237
**ADVANCED ASSEMBLER PROGRAMMING**
A continuation of CSC 127. Covers data manipulation; tape, disc, and floating/point operations; macro definitions and statements; analyzing and programming problems for business and scientific applications. 3 Cr. (3-0). *Prerequisite: CSC 127.*

CSC 238
**COBOL PROGRAMMING II**
Introduction to structures used to represent the logical relationship between elements of information and to the techniques used to operate on information structures using tape and disc storage. The student examines how a complex computer programming task can be subdivided for maximum clarity, efficiency, and ease of maintenance and modification. The concept of programming style permeates most of the material presented. Careful verification of program operation and documentation of programs are emphasized. 3 Cr.(3-0).
*Prerequisite: CSC 128.*

CSC 241
**SYSTEMS ANALYSIS AND DESIGN**
Study in the systematic approach for the analysis, design, development and implementation of a computerized business system; system life cycle; system investigation; problem definition; input, output designs; record file designs, system structures; documentation; independent and/or team development of an assigned system problem. 4 Cr. (4-0). *Prerequisites: CSC 118 and a programming language.*

CSC 242
**BASIC LANGUAGE PROGRAMMING**
Covers the BASIC programming language in detail, adding to and developing the concepts presented in CSC 118. Detailed discussion of the BASIC language including operating procedures of a time-sharing computer system. Interactive programming techniques will be stressed through such topics as data conversion, string functions, sequential I/O, virtual I/O, and record I/O. Programming techniques will be discussed. The course is geared to business data processing. A special project may be required. 3 Cr. (3-0). *Prerequisite: CSC 118.*

CSC 245
**COMPUTER SOFTWARE SYSTEMS**
Provides a working view of hardware/software configurations as integrated systems. The student is introduced to execution software,multiprogramming and operation software. Utility routines and file systems are investigated. Basic components of file and communication systems will be presented and analyzed. The functioning of these systems as integral components of an information system are stressed. 3 Cr. (3-0). *Prerequisites: CSC 118 and a programming language.*

CSC 246
**PL/1 PROGRAMMING**
Introduces the student to the PL/1 programming language as applied to business/mathematics problems, programming techniques and procedures. 3 Cr. (3-0). *Prerequisites: CSC 128 and CSC 234.*

CSC 247
**INTERNSHIP IN COMPUTER SYSTEMS**
Supervised on-the-job training or an individual research project in computer science. The student will be assigned to a faculty member from the division who will either place the student at a local industrial data processing installation for on-the-job training or help the student select a research topic. 3 Cr. (0-9).
*Prerequisite: Two semesters of computer science.*

CSC 249
**RPG PROGRAMMING II**
An advanced course in REPORT PROGRAM GENERATOR programming. Includes writing, compiling, and executing programs. Programs written for this course will include such topics as table lookup, sequential disc files, indexed-sequential disc files, and matching records. 3 Cr. (3-0). *Prerequisite: CSC 119.*

## COOPERATIVE EDUCATION (CED)

If co-op is taken in addition to the courses normally required for completion of their program of study, students will register for co-op experience using the numbers below. If co-op experience is elected in place of the course(s) within a curriculum, the student will register for the course(s) to be replaced using the course identification number followed by the letter "C". Example: ABC 831C Metal Work and Filling. This will indicate that the student is seeking credit for ABC 831 through participating in a co-op experience.

CED 101
**COOPERATIVE EDUCATION I**
Designed for the associate degree or certificate student wishing to participate in a related educational work experience as an elective. The student will be placed with an approved employer in a job integrating the skills and knowledge of his or her program. Variable 1-6 Cr.

CED 102
**COOPERATIVE EDUCATION II**
Designed for the associate degree or certificate student who has successfully completed CED 101 and wishes to participate in a second program of related educational work experience with the same or a new employer. Variable 1-6 Cr.

CED 103
**COOPERATIVE EDUCATION III**
This course is designed to assist the cooperative education student through the transition from college to the "world of work". A series of seminars will emphasize the acquisition of job application skills, adjustment to the work environment, and the development of sound interpersonal relationships. A portion of the course will be devoted to methods of reporting the day-to-day and total experiences gained while on the job. CED 103 may be required for co-op students prior to the initial job placement. No credit.

# D

## DENTAL HYGIENE (DHG)

DHG 100
**INTRODUCTION TO DENTAL HYGIENE**
An introduction to fundamental concepts and techniques of primary preventive measures. Use and care of dental equipment is included. 4 Cr. (2-6).

DHG 101
**CLINICAL DENTAL HYGIENE I**
Lectures are integrated with practical experience in the clinic. Students begin to provide preventive oral health services. 4 Cr. (3-3).
*Prerequisites: DHG 100, DHG 115.*

DHG 115
**ORAL ANATOMY AND HISTOLOGY**
Study of the development and structure of the oral and facial regions with emphasis on dental anatomy. 3 Cr. (3-0).

DHG 120
**ORAL RADIOLOGY**
Principles, techniques, and interpretation of intra-oral and extra-oral radiographs. The importance of accuracy and the safe use of radiation in the dental office is stressed. 2 Cr. (1-3).
*Prerequisites: DHG 115, DHG 100.*

DHG 125
**DENTAL MATERIALS**
Principles and manipulation of the physical, mechanical and chemical properties of dental materials. 3 Cr. (2-3).
*Prerequisites: DHG 115, DHG 100, DHG 120.*

DHG 200
**CLINICAL DENTAL HYGIENE II**
Students continue with experience in the techniques of performing the complete oral prophylaxis. Additional emphasis is placed on advanced procedures. 4 Cr. (0-12). *Prerequisites: DHG 101, DHG 120, DHG 125.*

DHG 201
**CLINICAL DENTAL HYGIENE III**
Increased experience on improved proficiency in dental hygiene techniques. 4 Cr. (0-12). *Prerequisites: DHG 200, DHG 235, DHG 237, DHG 239.*

DHG 235
**PERIODONTICS**
Prevention and treatment of periodontal disease. A study of healthy periodontium combined with clinical diagnosis, prevention, and treatment of periodontal disease. Self-paced instructional units supplement the course. 1 Cr. (1-0).
*Prerequisites: DHG 101, DHG 120, DHG 125.*

DHG 237
**PHARMACOLOGY AND EMERGENCIES**
A study of properties, dosage, actions, and reactions of drugs stressing those related to dentistry. Principles of first aid and emergency treatment are included. 3 Cr. (3-0).
*Prerequisites: DHG 101, DHG 120, DHG 125.*

DHG 239
**GENERAL AND ORAL PATHOLOGY**
Study of general and oral disease with emphasis on those diseases and anomalies related to the oral cavity. 2 Cr. (2-0).
*Prerequisites: DHG 101, DHG 120, DHG 125.*

DHG 240
**DENTAL PRACTICE ORIENTATION**
Ethics and jurisprudence – Office procedures and management. 1 Cr. (1-0). *Prerequisites: DHG 200, DHG 235, DHG 237, DHG 239.*

DHG 241
**COMMUNITY DENTAL HEALTH**
Philosophy of community dental health. Techniques of teaching preventive dental health to groups, fluoridation, special dental health programs, use of statistical materials. Through rotating assignments students will have the opportunity to participate and observe in a variety of dental settings. 2 Cr. (2-0).
*Prerequisites: DHG 200, DHG 235, DHG 237, DHG 239.*

DHG 243
**DENTAL SPECIALTIES**
Discussion of pedodontics, endodontics, oral surgery, operative dentistry, combined with practice in expanded functions. 3 Cr. (2-3).
*Prerequisites: DHG 200, DHG 235, DHG 237, DHG 239.*

## DENTAL LABORATORY TECHNICIAN (DLT)
Courses offered at Lewisburg Federal Penitentiary.

DLT 111
**INTRODUCTION TO DENTAL TECHNOLOGY (FUNDAMENTALS)**
Introduction to the terminology, materials, tools, equipment, and general area. Use of the above and the necessary safety precautions. Various basic techniques are also presented. 5 Cr. (3-6).

DLT 112
**DENTAL MATERIALS**
Familiarizes trainees with the history, names, types, physical and mechanical properties, uses, proper handling and limitations of dental materials, including impression materials, waxes, metals, gypsum, compounds, resins, and porcelains. 3 Cr. (3-0).

DLT 121
**DENTURE TECHNIQUES I**
Explains the qualities necessary for satisfactory dentures. Includes specialized techniques in tooth selection, arrangement, waxing and processing, immediate denture technique and various repair, reline and rebasing procedures. 6 Cr. (3-9).

DLT 122
**ORAL ANATOMY**
A study of the skull, including its blood and nerve supply, muscles, joints, surfaces, glands and teeth. 3 Cr. (3-0).

DLT 231
**DENTURE TECHNIQUES II**
Utilizing training from DLT 121 through practical application on actual cases. Improves skills, quality, accuracy and speed, in a productive setting. 6 Cr. (1-15). *Prerequisite: DLT 121.*

DLT 232
**ODONTOGRAPHY**
A study of tooth anatomy, including lectures and bench procedures. Drawing of teeth to scale and carving to scale in plaster and wax. 4 Cr. (2-6).

DLT 241
**CAST PARTIAL TECHNIQUES I**
Includes an introduction to removable partial appliances, terminology, phases of construction, use of surveyor, design, connectors, rests and retainers. Also waxing, spruing, investing, casting, finishing, and polishing. 6 Cr. (3-9).

DLT 242
**CROWN AND BRIDGE I**
Begins with the historical background of crown and bridge procedures and techniques, continues on to include the latest in the construction of inlays, crowns, and bridges from impression to completion, including soldering and veneering. 5 Cr. (3-6).

DLT 251
**CAST PARTIAL TECHNIQUES II**
Utilizes training from DLT 241 through practical application on actual cases. The improving of skills, quality, accuracy and speed, in a productive setting. 6 Cr. (1-15). *Prerequisite: DLT 241.*

DLT 252
**CROWN AND BRIDGE II (DENTAL CERAMICS)**
Begins with a discussion of the history of the art of ceramics. Covers the various compositions of dental porcelains. Manipulation, carving, firing, and glazing of porcelain, with characterization and shading of porcelain stressed, using stains and modifiers. Techniques of fusing and soldering porcelain to gold. 5 Cr. (3-6). *Prerequisite: DLT 242.*

## DEVELOPMENTAL STUDIES (CHD, ENL, MTH, RDG)

CHD 100
**VALUE CLARIFICATION AND DECISION MAKING (8 weeks)**
This course is designed to enhance a student's self understanding as well as to provide a "skills" orientation toward coping with life problems. The basic tenets of the course recognize that many of the skills, techniques, and strategies that individuals use in various life situations can be adapted and are almost universally applied in other kinds of life difficulties. The course attempts to show students that a "life plan" is complete only when one considers all aspects of the human condition as important. 1 Elective Cr. (1.5-1.5).

CHD 101
**CAREER EXPLORATION (8 weeks)**
Specific steps in the career decision making process will be taught. Students will explore the world of work as it relates to their values, interests and abilities. The course will be a step by step process culminating in teaching students how to make career decisions. 1 Elective Cr. (1.5-1.5).

ENL 011
**BASIC ENGLISH**
This course emphasizes writing skills: organization, structure, content, style, and mechanics. Individualized instruction, instructor control of the writing process, limited class size, and personalization of grammar instruction are characteristic of the course. 3 Institutional Cr. (3-0).

MTH 001
**ARITHMETIC**
Comprehension of the basic concepts and skills of arithmetic to prepare students for required mathematics courses. Pre and post-tests are used to prescribe and insure mastery of units covered. 3 Institutional Cr. (3-0).

MTH 002
**BASIC ALGEBRA**
Basic skills and concepts of arithmetic and algebra are presented according to the learner's aptitudes and needs. Pre and post-tests are used to prescribe and insure mastery of units covered. The course may require more than one semester for mastery of the objectives. 3 Institutional Cr. (3-0).

RDG 010
**READING IMPROVEMENT**
Basic reading improvement for students with limited success in previous reading performance. Differences in ability and background will determine areas each student will pursue. Emphasis on comprehension, vocabulary, speed, spelling and taking notes from textbook assignments. Audio tapes, reading machines, individualized materials, and handout sheets available to encourage individual learning. 3 Institutional Cr. (3-0).

RDG 099
**INDEPENDENT STUDY**
A course of study designed to meet the specific needs of students who need individualized and personalized assistance in gaining reading skills or study skills. No credit. (1-3).

RDG 101
**COLLEGE READING AND STUDY SKILLS**
Designed to enable students to acquire or review basic reading and study skills essential for success in college courses. Specific reading skills develop comprehension, vocabulary, and speed. Effective study habits and skills include outlining, summarizing, underlining, notetaking, and test-taking techniques. 2 Elective Cr. (2-0).

RDG 102
**COLLEGE STUDY SKILLS (5 weeks)**
Designed to enable students to develop effective study habits and skills. Emphasis on outlining, summarizing, underlining, notetaking and test-taking techniques. 1 Elective Cr. (2-2)

RDG 103
**LIBRARY SKILLS (5 weeks)**
Designed to enable students to become familiar with and to locate and use materials in the WACC library. Emphasis on the preparation of the working outline of a research paper. 1 Elective Cr. (2-2).

## DIESEL MECHANICS (DMC)

DMC 711
**INTRODUCTION TO DIESEL MECHANICS (8 weeks)**
Precision mechanical measurement. Basic fastening devices. Gasoline and diesel engine operation and service. 6 Cr. (6-18).

DMC 712
**INTERNAL COMBUSTION ENGINES (8 weeks)**
Introduction to diesel engines. Electrical systems, with emphasis on cranking, lighting, ignition, charging circuits, hand tools, power tools, and bench work. 6 Cr. (6-18).

DMC 721
**FOUR-CYCLE DIESEL ENGINES (8 weeks)**
Four-cycle diesel engine repair and overhaul. Emphasis on diesel truck engines. 6 Cr. (6-18). *Prerequisites: DMC 711, DMC 712.*

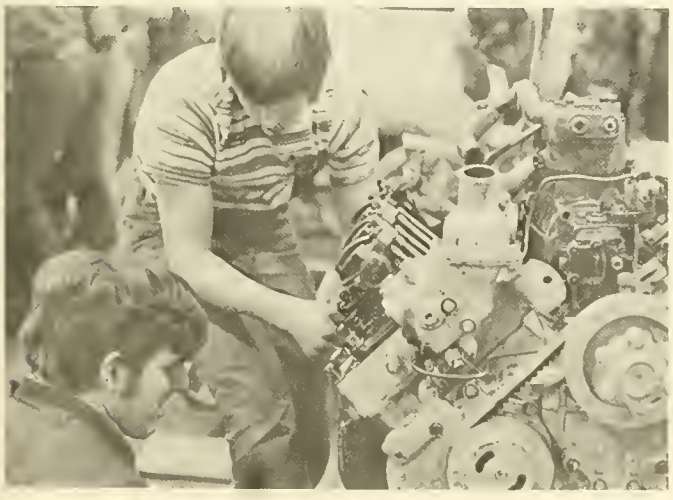
DMC 722
**TWO-CYCLE DIESEL ENGINES (8 weeks)**
Two-cycle diesel engine repair and overhaul. Application of diesel power, including trucks. Air induction system overhaul and troubleshooting. Basic air-conditioning/refrigeration principles. 6 Cr. (6-18). *Prerequisites: DMC 711, DMC 712, DMC 721.*

DMC 831
**FUEL INJECTION SYSTEMS I (8 weeks)**
Introduction to diesel fuel injection systems. Principles of governing and mechanical governing. Principles of jerk type fuel systems. 6 Cr. (6-18). *Prerequisites: DMC 711, DMC 712, DMC 722, or SOE 723, or AMC 724 or AMD 114.*

DMC 832
**FUEL INJECTION SYSTEMS II (8 weeks)**
Hydraulic governors. Principles of distributor type fuel systems. 6 Cr. (6-18). *Prerequisites: DMC 711, DMC 712, DMC 721, DMC 722, DMC 831.*

DMC 841
**TRUCK TRACTOR POWER TRAIN (8 weeks)**
Truck power train. Clutch, transmission, driveline, and differential. 6 Cr. (6-18). *Prerequisites: DMC 711, DMC 712, DMC 721, DMC 722.*

DMC 842
**TRUCK TRACTOR CHASSIS (8 weeks)**
Truck chassis, brakes, and suspension. State inspection procedures. 6 Cr. (6-18). *Prerequisites: DMC 711, DMC 712, DMC 721, DMC 722, DMC 841.*



## DRAFTING—ENGINEERING (EDT)

EDT 101
**MECHANICAL DRAWING**
Offered to students who are enrolled in curricula other than drafting. Use of drawing instruments, lettering, geometric construction, orthographic projection, technical sketching, isometric and oblique sketches, dimensioning, sections, auxiliary views, threads and fasteners, working drawings, and blueprint reading. 2 Cr. (1-3).

EDT 102
**ENGINEERING DRAFTING**
Practical application of drafting to the electrical construction field for both domestic and commercial use; house diagrams with circuit schematics, wiring diagrams and complete bill of material and layout diagrams for public facilities such as the lighting system for a small community. 2 Cr. (1-3).

EDT 103
**GEARS AND CAMS**
A study of motion transfer through the use of gears and cams. 2 Cr. (1-3).

EDT 104
**AIRCRAFT DRAWINGS**
Aircraft blueprint reading for aviation maintenance technicians with emphasis on the reading and interpretation of multiview drawings, including installation diagrams, schematics, the use of charts and graphs. Making three dimensional sketches for repair and alterations to aircraft. 2 Cr. (1-3).

EDT 106
**INDUSTRIAL PROCESSES**
Theories and applications in the principal metal removal, forming, joining, and casting processes. 2 Cr. (2-0).

EDT 107
**BLUEPRINT READING**
A study of blueprint reading for welders with emphasis on the reading and interpretation of multiview drawings involving dimensions, notes, specifications and welding symbols. 2 Cr. (1-3).

EDT 111
**BASIC DRAFTING I (8 weeks)**
Use of drawing instruments, lettering, geometric construction, orthographic projection, isometric drawings, sectioning, dimensioning, auxiliary views, revolutions and freehand sketching. 4 Cr. (4-12).

EDT 112
**BASIC DRAFTING II (8 weeks)**
Inclusion of screwthreads and fastening devices, working assembly and installation drawings; axonometric projection; study of sheet metal intersections and developments. 4 Cr. (4-12). *Prerequisite: EDT 111.*

EDT 121
**POWER TRANSMISSION (8 weeks)**
A study of power and motion transfer through the use of gears and cams and other devices. 4 Cr. (4-12).

EDT 122
**MECHANISMS (8 weeks)**
A study of power and motion transfer through the use of various linkages and mechanisms. 4 Cr. (4-12).

EDT 201
**DESCRIPTIVE GEOMETRY**
Principles of orthographic projection; fundamental problems involving the relationship of points, lines and planes in space; intersecting lines and planes; graphical computations for bearings and slopes of lines, strike and dip of planes; solution of problems of intersection of planes and solids. 3 Cr. (1-6). *Prerequisite: High school background in drafting.*

EDT 231
**DETAIL AND ASSEMBLY DRAWINGS (8 weeks)**
Accurate working drawings, sub-assemblies and assemblies; drawing details from sketches and other engineering specifications; applied strength of materials; bearings; lubrications; elementary design and simplified drafting. 4 Cr. (4-12). *Prerequisite: EDT 112.*

EDT 232
**APPLIED DRAFTING TECHNIQUES (8 weeks)**
Complicated detail drawings from industrial castings; comprehensive study of close tolerance dimensioning; introduction to fluid mechanics; metric conversion. 4 Cr. (4-12). *Prerequisite: EDT 231.*

EDT 241
**ADVANCED DETAIL I (8 weeks)**
Redesign of industrial castings into weldments; detail drawings from engineering layouts; comprehensive study of welding, piping and layouts; strength of material as applied to weldments and piping design. 4 Cr. (4-12).

EDT 242
**ADVANCED DETAIL II (8 weeks)**
Advanced study and application of drafting using layouts from industry to make detail, assembly and sub-assembly drawings; included are geometric tolerancing, true position dimensioning and surface specifications in accordance with industrial standards; structural drafting and reprodrafting. 4 Cr. (4-12). *Prerequisite: EDT 232.*

## DRAFTING—MECHANICAL (MDT)

MDT 711
**DRAFTING TECHNIQUES I (8 weeks)**
Mechanical drawing; lettering; geometric drawing; orthographic projection; pictorial projections; sectioning; dimensioning; auxiliary views; revolutions; free-hand sketching; reproduction processes. 5 Cr. (3-21).

MDT 712
**DRAFTING TECHNIQUES II (8 weeks)**
Threads, fasteners, springs; working drawings; assembly, detail and installation drawings. 5 Cr. (3-21).

MDT 721
**APPLIED DRAFTING I (8 weeks)**
Study of sheet metal intersections and developments, cones, transition pieces, irregular shapes; introduction to making accurate detail drawings from industrial machine parts. 5 Cr. (3-21).

MDT 722
**APPLIED DRAFTING II (8 weeks)**
Accurate detail drawings from complicated industrial machine parts, conforming to industrial and military standards; comprehensive study of close tolerance dimensioning. 5 Cr. (3-21).

MDT 801
**DRAFTING**
Simple machine layout; completion of the necessary drawings according to industrial practices. 5 Cr. (1-12). *Prerequisite: Division Director approval.*

MDT 831
**APPLIED DRAFTING III (8 weeks)**
Study of power transmissions, pulleys, sheaves, gears, sprockets. 5 Cr. (3-21).

MDT 832
**APPLIED DRAFTING IV (8 weeks)**
Study of the mechanisms used to create motion in machine cams, linkages. 5 Cr. (3-21).

MDT 841
**APPLIED DRAFTING V (8 weeks)**
Redesigning industrial castings into weldments; detail drawings from engineering layouts; comprehensive study of welding, piping and layout drawings. 5 Cr. (3-21).

MDT 842
**APPLIED DRAFTING VI (8 weeks)**
Advanced study of drafting applications using industrial layouts to make detail, assembly, sub-assembly drawings; geometric tolerancing; true position dimensioning; surface finish specifications in accordance with industrial and military standards. 5 Cr. (3-21).

*NOTE: Courses to be taken in sequence as listed unless approval is granted by the Division Director.*

# E

## ECONOMICS (ECO)

ECO 201
**PRINCIPLES OF ECONOMICS**
An introductory course dealing primarily with the United States economy, its make-up and problems. 3 Cr. (3-0).

ECO 202
**ECONOMIC ANALYSIS**
A study of the theory of the firm, and analysis of economic problems involved in public policy decisions. Required of students following the business administration curriculum, or intending to major in economics. 3 Cr. (3-0). *Prerequisite: ECO 201.*

ECO 290
**SPECIAL STUDIES IN ECONOMICS**
A flexible course designed to meet special needs of economics students. 1-3 Cr. (1 to 3-0). *Prerequisite: Permission of the instructor.*

## EDUCATION (EDU)

EDU 111
**INTRODUCTION TO EDUCATION**
Foundations of education: historical, economic, philosophical, and social. Their implications for present-day education. 3 Cr. (3-0).

EDU 121
**CHILDREN'S AND YOUNG ADULT LITERATURE**
Comprehensive survey of children's and young adult literature. Provides a basic knowledge and understanding of authors, illustrators, and literary forms as background for work in a public area. 3 Cr. (3-0).

## ELECTRIC (ELC & ELT)

ELC 711
**DIRECT CURRENT FUNDAMENTALS**
Study of basic electrical laws, electrical terms, batteries, electrostatics, electrical meters and instruments, direct-current machinery. 6 Cr. (4-6).

ELC 712
**BASIC WIRING LAB**
Lab course in tools and materials of trade; proper use and care of hand tools; instruction in wiring of these basic circuits; residential lighting and receptacle circuits, low voltage switching and control circuits; use of electrical underwriters rules in color coding. 3 Cr. (1-5).

ELC 713
**MOTOR REWINDING**
Electrical and mechanical features of various single phase motors; lab work and developing knowledge and skill in rewinding and repairing single phase motors. 3 Cr. (1-5).

ELC 721
**BASIC MOTOR CONTROL**
Theory and lab assignment involving wiring of starting and control equipment for DC and AC motors; including circuitry for start-stop stations, forward-reverse and jogging push button stations, and some speed control. 4 Cr. (3-3).

ELC 722
**ALTERNATING CURRENT FUNDAMENTALS**
Study of nature of alternating current electricity as related to residential, commercial and industrial power use; laws and formulas needed for the solution of problems in the use of AC power, study of AC machinery; lab work for demonstrating AC electrical principles; practical experience in hook-up of equipment and instruments. 6 Cr. (4-6). *Prerequisite: ELC 711.*

ELC 723
**RESIDENTIAL BLUEPRINT AND CODE**
Study of residential wiring circuits, low voltage remote control switching and electric heating, study of the National Electrical Code book and its provisions dealing with residential and other types of wiring. 4 Cr. (4-0).

ELC 832
**ADVANCED MOTOR CONTROL**
Theory and laboratory assignments further jobs learned in ELC 721, with the study and use of speed controls, plugging equipment for braking and dynamic braking, timing relays involving pneumatic and dash pot types. 3 Cr. (1-5). *Prerequisite: ELC 721.*

ELC 833
**BASIC ELECTRICAL CONSTRUCTION LAB**
Experience in the use and installation of electrical materials; house wiring circuits, wiring boxes of many kinds, armored cable, wire mold and romex, fluorescent and incandescent light switches and receptacle circuits. 3 Cr. (1-6). *Prerequisite: ELC 712*

ELC 834
**BASIC ELECTRONICS FOR INDUSTRY**
Basic electronics concepts used in industrial control. Study of vacuum tubes, electronic circuits, solid state devices, symbols, and motor circuits. Application of these devices in laboratory practices demonstrates use in industry. 6 Cr. (4-6). *Prerequisite: ELC 722.*

ELC 843
**INDUSTRIAL MOTOR CONTROL**
Study of industrial control circuitry involving theory of SCR equipment, static control and circuitry, logic; laboratory experience in designing and constructing control panels used in industry. 4 Cr. (3-3). *Prerequisite: ELC 832.*

ELC 844
**COMMERCIAL & INDUSTRIAL BLUEPRINT READING**
Study of electrical construction planning for industry and commerce and relevant electrical code. 4 Cr. (4-0).

ELC 845
**ADVANCED ELECTRICAL CONSTRUCTION**
Practice in installation of rigid conduit and other electrical wireways; pulling in and wiring of motor controllers and other electrical equipment; study of blueprints of large electrical construction jobs. 3 Cr. (0-9). *Prerequisite: ELC 833.*

ELC 846
**ELECTRICAL MACHINERY, ANALYSIS AND REPAIR**
Theory and laboratory instruction in use of complex metering methods used with industrial equipment, static and logic circuitry, equipment troubleshooting and repair using schematic diagrams, power transmission and distribution. 4 Cr. (2-6). *Prerequisite: ELC 834.*

ELT 110
**ELECTRICITY FOR THE TRADES**
Theory and laboratory assignments involving electrical design and symbols as noted on building construction blueprints. Explanation of electrical diagrams, and National Electrical Code as governing agent setting rules for wiring requirements. Residential wiring, switching, lighting, receptacles, and service entrances in the laboratory.
3 Cr. (2-3).

ELT 111
**DIRECT CURRENT FUNDAMENTALS**
A study of the basic principles of electricity and the laws and formulas which are used to solve electrical problems. Principles of magnetism and their relationship to direct current generators and motors and other electrical machinery. Laboratory work to enable the student to hook up equipment and instruments. 5 Cr. (4-3).

ELT 112
**BASIC WIRING LAB**
Instruction in wiring basic electrical circuits, residential lighting and receptacle circuits. Low voltage switching and control circuits. Electrical underwriters rules. Proper use and care of hand tools.
3 Cr. (1-6).

ELT 113
**ACCIDENT PREVENTION**
Principles of accident prevention in industry and electrical safety procedures in all human activities; lifesaving techniques. 2 Cr. (2-0).

ELT 121
**RESIDENTIAL BLUEPRINT READING/NATIONAL ELECTRICAL CODE**
Planning and drawing residential wiring systems; calculating number and size of circuits needed for lighting, appliance, and heating; remote control systems; study of National Electrical Code requirements for residential, industrial, and commercial wiring. 4 Cr. (4-0).

ELT 122
**ALTERNATING CURRENT FUNDAMENTALS**
The fundamental principles of the behavior and flow of alternating current electricity. Includes problem solving, current, voltage, impedance, reactance and power factor in series and parallel circuits. Operating principles of AC motors, generators and control equipment.
5 Cr. (4-3). *Prerequisite: ELT 111.*

ELT 123
**BASIC ELECTRICAL CONSTRUCTION LAB**
Further study of the use of electrical equipment and materials, including all types of wiring devices and wiring systems. Planning and installing electrical systems, bending conduit, pulling in wires, connecting devices, lighting systems and distribution systems.
2 Cr. (1-3). *Prerequisite: ELT 112 or ELC 712.*

ELT 233
**BASIC ELECTRONICS**
Fundamentals of electronics including basic symbols, circuit configurations, electron tubes, solid state devices; rectifier, amplifier, and oscillator circuits as used in industrial work. Laboratory skills demonstrate practical application of industrial electronics through layout and assembly of various circuits, along with solid state devices.
6 Cr. (4-6). *Prerequisite: ELT 122.*

ELT 234
**ELECTRICAL MOTOR CONTROL**
Motor control systems in industry, simple and complex, tracing circuits and troubleshooting a system from a schematic drawing. The principles of rotating and magnetic amplifiers, and static switching.
4 Cr. (3-3).

ELT 241
**ELECTRICAL SYSTEMS ANALYSIS**
Understanding electrical equipment and electrical testing apparatus to aid in locating and repairing malfunctions in equipment. Preventive maintenance and maintenance records. Use of voltmeters, ammeters, wattmeters, ohmmeters, megohmmeters, wheatstone bridge, tachometer, and all hand tools associated with the electrical trade.
2 Cr. (1-3). *Prerequisite: ELT 233.*

ELT 242
**ELECTRICAL CONSTRUCTION BLUEPRINT READING**
Blueprint reading and circuit planning for construction in factories and commercial buildings. Reference to the rules of the National Electrical Code and the Department of Labor and Industry. 4 Cr. (4-0).

ELT 244
**ADVANCED ELECTRICAL THEORY**
Solution of network problems and problems involving charge and discharge of capacitors, rotating vectors and other problems involving alternating electricity. 3 Cr. (3-0). *Prerequisite: ELT 122.*

## ELECTRONICS (ENT)

ENT 111
**DC - AC THEORY**
Introduction to electrical and electronics theory, including basic atomic theory, Ohm's Law, Kirchoff's Law with formulas and calculations for network analysis; AC waveforms; capacitance and inductance, resonance; vector analysis, complex AC numbers, including the j operator. 5 Cr. (5-0).

ENT 115
**ELECTRONICS LABORATORY I**
Application of basic AC - DC theory concepts; wiring, soldering techniques and circuit construction practices for electronic circuits; introduction to the use of test equipment and measuring techniques; safety practices for electronics. 3 Cr. (0-9).
*Prerequisites or Corequisites: ENT 111, ENT 116.*

ENT 116
**INTRODUCTION TO SOLID STATE DEVICES**
Physics of solid state devices. Their essential characteristics, symbols and quiescent operating modes are emphasized; basic circuits are introduced. 3 Cr. (3-0).

ENT 125
**INTERMEDIATE SOLID STATE DEVICES AND CIRCUITS**
Continuation of ENT 116; AC equivalent circuits, design analysis; op-amps; integrated circuits; multi-stage design; feedback analysis.
5 Cr. (5-0). *Prerequisite: ENT 116.*

ENT 126
**ELECTRONICS LABORATORY II**
Construction and measurement of a variety of solid state devices and circuits; extensive measurement techniques are employed to collect data; emphasis is placed on the presentation of collected data in technical report form using narrative and graphic techniques.
3 Cr. (0-9). *Prerequisites or Corequisites: ENT 115, ENT 125.*

ENT 127
**INTRODUCTION TO DIGITAL ELECTRONICS**
Digital number systems and codes; introduction to basic gates and associated circuits; digital analysis by timing diagrams. 3 Cr. (3-0).

ENT 233
**COMMUNICATION CIRCUITS AND SYSTEMS**
Modulation systems for transmission and reception; wave propagation; transmission lines and antennas; digital communication techniques; high power vacuum tube circuits. 5 Cr. (5-0). *Prerequisite: ENT 125.*

ENT 237
**ELECTRONICS LABORATORY III**
Advanced prototyping techniques; communication circuit alignment and measurement with specialized test equipment; digital circuit implementation with a variety of logic families; advanced technical report writing. 3 Cr. (0-9).
*Prerequisites or Corequisites: ENT 233, ENT 238.*

ENT 238
**INTERMEDIATE DIGITAL ELECTRONICS**
Continuation of ENT 127; state of the art digital circuits are analyzed; digital measuring equipment and techniques are emphasized.
3 Cr. (3-0). *Prerequisite: ENT 127.*

ENT 241
**CALIBRATION AND STANDARDIZATION**
Designed to provide the student with the principles of electronic instrument calibration and standardizing techniques; instruments used in laboratory are calibrated according to the National Bureau of Standards. 3 Cr. (2-3).

ENT 246
**INTRODUCTION TO MICROPROCESSORS**
Provides an understanding of basic microprocessor architecture; develops an understanding of microcomputer programming techniques and software aids, and illustrates methods of interfacing microcomputers to digital systems. 5 Cr. (5-0).
*Prerequisites: ENT 127, ENT 238. Corequisite: ENT 247.*

ENT 247
**ELECTRONICS LABORATORY IV**
Lab experiments will complement ENT 246. Each student will be provided with a microprocessor trainer to implement programming and interfacing techniques; use of specialized digital measuring instrumentation, including complex logic analyzers and storage oscilloscopes. 3 Cr. (0-9). *Corequisite: ENT 246.*

ENT 248
**ADVANCED CIRCUIT ANALYSIS**
Latest state of the art devices and circuits, both analog and digital, are analyzed in detail to involve the student in advanced troubleshooting techniques. 3 Cr. (3-0).

## ENGINEER IN TRAINING (EIT)

EIT 201
**STATICS**
The course includes the study of basic principles of statics: various force systems, static equilibrium of the force systems, friction and miscellaneous static related problems. The practical applications of these principles – analysis of roof and bridge trusses, beam under various loading conditions; belt friction and rolling resistance, flexible cables, etc. are also covered. 3 Cr. (3-0).

EIT 202
**STRENGTH OF MATERIALS I**
The course outlines properties of engineering materials, behavior of materials under loads, stress and deformations, riveted and welded joints, torsion, centroids, moment of inertia, areas of shear and moments in beams, stresses in beams and design of beams. Students will learn to analyze and design simple beams, riveted and welded connections, shafts subjected to torsion, etc. 3 Cr. (3-0).

EIT 203
**DYNAMICS**
The course covers basic principles of dynamics, i.e., kinematics of rectilinear motion, curvilinear motion, kinetics of motion, plane motion, and their effects on moving or static bodies. The application of these principles includes use of work, energy and power and impulse, momentum and impact concepts to solve various motion problems.
3 Cr. (3-0).

EIT 204
**FLUID MECHANICS**
The course presents the basic principles of fluid mechanics and their applications in practical fluid mechanics problems. It includes study of properties of fluids, fluid pressure at rest, buoyancy effect, steady flow of liquids in closed conduits, as well as in open channels, losses in both cases, flow measuring devices, variable flow, forces produced by fluids in motion and dimensional analysis and similitudes. All equations of the fluid flow are derived from the basic Bernoulli equation.
3 Cr. (3-0).

EIT 205
**STRENGTH OF MATERIALS II**
Continuation of Strength of Materials I. Covers complex problems such as deflection of beams by moment-area method, analysis of statically indeterminate beams by three moment equation and moment distribution methods, combined bending and axial stresses, analysis and design of timber, steel and aluminum columns and special topics of strain energy and impact loadings. 3 Cr. (3-0).

EIT 206
**ENGINEERING ECONOMICS**
Study of economics as it relates to engineering. 3 Cr. (3-0).

EIT 207
**ENGINEERING CHEMISTRY**
An intensive course of chemical calculations based on chemical reactions and physical properties of substances. Includes theoretical topics as needed for a basis of calculations. 3 Cr. (3-0).

EIT 208
**THERMODYNAMICS**
The study of energy transfer in relation to the changes in physical properties of substances. 3 Cr. (3-0).

EIT 209
**ENGINEERING PHYSICS**
A study of physics as it relates to engineering. 3 Cr. (3-0).

EIT 210
**ENGINEERING ELECTRONICS**
This course is designed to apply fundamental principles of electrical circuit analysis to EIT problems. Concepts of study include Ohm's law, series circuits, parallel circuits, series-parallel circuits, network theorems, magnetism, electro-magnetic induction, alternating current and voltage inductance, inductive reactance, capacitance, capacitive reactance, capacitive circuits, alternating current circuits, complex numbers and resonance. 3 Cr. (3-0). *Prerequisites: algebra, trigonometry and basic calculus.*

## ENGLISH (ENL)

ENL 011
**BASIC ENGLISH**
This course emphasizes writing skills: organization, structure, content, style, and mechanics. Individualized instruction, instructor control of the writing process, limited class size, and personalization of grammar instruction are characteristic of the course. 3 Institutional Cr. (3-0).

ENL 111
**ENGLISH COMPOSITION I**
Basic composition involving language structure, rhetorical principles, orderly, clear writing, and readings in expository prose. Model writings offer the student a variety of methods to develop his/her own written expression. Analysis, discussion, and practice of such methods as description, definition, narration, comparison, and classification. The student uses writing to explain and explore, gaining experience in essential writing and research skills. 3 Cr. (3-0).

ENL 121
**ENGLISH COMPOSITION II**
Continues the writing principles of ENL 111 and includes the study of poetry, prose, and drama. Analysis, discussion, and practice of such methods of explanatory development as argumentation and evaluation in writing. The student-writer's experience and control in writing are used in situations calling for interpretation. 3 Cr. (3-0).

ENL 201
**TECHNICAL WRITING**
Intensive survey of technical writing with practice in preparing reports for business and industry. 3 Cr. (3-0).

ENL 202
**FUNDAMENTALS OF SPEECH**
Includes public speaking, its methods and evaluation, and the development of persuasive speech; involves the study of modern rhetorical theory in interpersonal and group dynamics; mass persuasion and non-verbal behavior. The student will participate as speaker in a variety of situations and roles, such as conflict, mediation, support, and common ground. 3 Cr. (3-0).

ENL 231
**WORLD LITERATURE**
The reading of literature expressing the western belief in the paramount importance of the individual. Includes a survey of representative works of continental Europe to the present. 3 Cr. (3-0). *Prerequisite: ENL 121.*

ENL 235
**CREATIVE WRITING**
Development of skills in writing imaginative prose and in presenting short stories for class criticism and review. 3 Cr. (3-0).

ENL 290
**SPECIAL STUDIES IN ENGLISH**
Individual guidance in advanced studies. Admission by permission of the instructor. 1-3 Cr. (1 to 3-0).

ENL 711
**COMMUNICATIONS**
Skills and competencies in basic technical writing and oral communication relevant to the needs of the applied arts certificate student. 3 Cr. (3-0).

## ENVIRONMENTAL SCIENCE (ESC)

ESC 100
**ENVIRONMENTAL SCIENCE**
Designed especially for the non-science student who wants to develop an ability to understand environmental systems and problems from a scientific viewpoint. Covers many aspects of energy, land, water, and air pollution and its relation to living organisms, especially people. 3 Cr. (3-0).

# F

## FOOD AND HOSPITALITY (FHD)

FHD 111
**INTRODUCTORY FOODS**
Study of the basic scientific principles of chemistry and physics involved in the preparation of foods as well as generally accepted food preparation practices. Included are an introduction to food purchasing and an orientation to the food service industry. 3 Cr. (2-3).

FHD 112
**NUTRITION**
Sources and functions of nutrients and how they relate to bodily functioning. Dietary essentials of an optimum diet. Includes nutritive requirements of each stage of the life cycle. 3 Cr. (3-0).

FHD 113
**FIELD EXPERIENCE IN MANAGEMENT SYSTEMS I (8 weeks)**
An introductory hands-on hospital and dietary experience, including orientation to a hospital and work experiences in dietary office practice, food preparation, beltline service, and patient visitations. 1 Cr. (0-6). (32 Clinical Hours).

FHD 114
**INTRODUCTION TO FOOD SERVICE ADMINISTRATION AND MEDICAL CARE ORGANIZATIONS**
Organization and management of a dietary unit, the role of the technician, and the working relationship with other health care professionals. Federal, state and local regulations of food handling. Examination of total health care systems, organizational structure, medical records, laws, and ethics. 2 Cr. (2-0).

FHD 115
**PURCHASING, STORAGE, AND SANITATION**
Managerial training in all facets of purchasing. Proper procedures for good storage and sanitation. Training of staff in proper procedures to assure production of safe food. 3 Cr. (3-0).

FHD 121
**QUANTITY FOOD PREPARATION**
Menu planning, purchasing, preparation, and service of foods in quantity. Special emphasis on safe and efficient use of quantity food preparation equipment, cooking with steam and deep fat, meats, and production management. 3 Cr. (2-3).

FHD 122
**DIET THERAPY WITH DIETETIC SEMINAR**
In-depth study of principles of therapeutic diets. Includes medical terminology, tours of community health services, and familiarity with diet manuals. Students learn interviewing, counseling techniques, sources of professional updating and, in seminar, study of specific therapeutic cases. 3 Cr. (3-0).

FHD 123
**FIELD EXPERIENCE IN MANAGEMENT SYSTEMS II**
Students work in the dietary department related to the subjects they are studying. Six hour lab periods are rotated between quantity food production, menu and cost control, and diet therapy with a one hour a week seminar with dietitian supervisor to discuss unanswered questions and learning experiences. 3 Cr. (1-6). *Prerequisite: FHD 113.*

FHD 125
**MENU PLANNING AND COST CONTROL**
Techniques of planning nutritious meals for commercial establishments and institutions; the printed menu presentation; controlling costs through good menu planning and other techniques. 3 Cr. (3-0).

FHD 126
**FRONT OFFICE MANAGEMENT AND HOUSEKEEPING**
Introduction to hotel and motel management; managing a front office, including promotion, guest registration, and cost control; management of the housekeeping department. Includes actual supervised work experience at area hotels and motels. 3 Cr. (2-3). Will be offered every other year in the spring term.

FHD 201
**ADVANCED QUANTITY FOODS**
Cooking foods in quantity; emphasis on advanced skills of food preparation, ordering and receiving, individual learning objectives. Will be developed to strengthen area where student needs help. 2 Cr. (0-6). *Prerequisite: FHD 121.*

FHD 231
**FIELD EXPERIENCE IN MANAGEMENT SYSTEMS IV**
Students receive training in kitchen and geriatric therapeutics in a Nursing Home. Emphasis is on personnel management, hiring, training, and record keeping. 3 Cr. (1-6). *Prerequisite: FHD 250.*

FHD 234
**HEALTH CARE DELIVERY SYSTEMS**
This course is an in-depth study of the health care programs available to the public. Students study the development of present problems and future directions of health care institutions and the medical profession. Also included are factors that consumers of health care services should be knowledgeable about in order to avoid fads and quacks. 3 Cr. (3-0).

FHD 235
**PERSONNEL MANAGEMENT, WORK SIMPLIFICATION**
A study of management techniques, interpersonal relationships, motivations, manual motions, work place layout, production job analysis and evaluation, establishing work loads. 3 Cr. (3-0).

FHD 236
**HOSPITALITY MANAGEMENT AND THEORY**
Supervised practical experience in various areas of food and hospitality management and production. Lecture and discussion of work schedules, employer-employee relations, food purchasing and preparation, supervision and training of personnel, menu planning and other subjects related to the student's choice of practicum. 2 Cr. (1-5).

FHD 241
**BEVERAGE MANAGEMENT AND CATERING**
Techniques used in restaurant management related to all types of beverages and bar management. Management of the catered meal. Preparation and presentation of classic and international cuisines. 3 Cr. (2-3). *Prerequisite: FHD 121, or work experience in food preparation for a varied menu.*

FHD 242
**FIELD EXPERIENCE IN MANAGEMENT SYSTEMS V**
Management in various nutrition programs. Students work in a school, with congregate feeding for the aged, and in a five meal a day hospital program with special emphasis on renal and cancer patients.
3 Cr. (1-6). *Prerequisite: FHD 231.*

FHD 245
**EQUIPMENT AND LAYOUTS**
Familiarizes students with all the latest pieces of equipment and ways to lay out facilities for best production, service, safety, and sanitation.
3 Cr. (3-0). *Prerequisite: FHD 121, or commercial or institutional work experience.*

FHD 246
**HOSPITALITY MERCHANDISING**
Techniques of sales, merchandising and promotion as applied to food and lodging establishments. Each student does an in-depth feasibility study on a possible investment including financing and merchandising.
3 Cr. (3-0).

FHD 250
**HOSPITALITY, DIETETIC WORK EXPERIENCE (MANAGEMENT SYSTEMS III)**
Prior to the beginning of the fourth semester a work experience of 120 hours is required. Dietetic Technician students work in an institutional dietary department under a registered dietitian. Food and Hospitality students work in the food and hospitality industry. Students are evaluated by employer/supervisor, submit a written report, and discuss their experience with the instructor. 1 Cr. (120 Clinical Hours).
*Prerequisite for Dietetic Technician Program: FHD 123.*

## FOREST TECHNOLOGY (FOR)

FOR 111
**DENDROLOGY**
Classification, identification, and distribution of woody plants in the United States, with special emphasis on species of local commercial importance. 3 Cr. (2-3).

FOR 113
**FOREST MENSURATION**
Measurement of standing trees, of logs and other cut wood products; the determination of the contents of these products in terms of board feet, cubic feet, cords, and pounds. The measurement of growth in trees and forests. 3 Cr. (2-3).

FOR 115
**FOREST BOTANY**
The study of plant physiology and anatomy with special reference to trees. The stem structure of trees and the identification of commercial tree species based on microscopic characteristics of wood. 3 Cr. (2-3).

FOR 121
**PHOTOGRAMMETRY AND FOREST SURVEYING I**
Introductory study of the basic techniques of photogrammetry, photo-interpretation; introduction to surveying, including the fundamentals of plane surveying and the use and care of equipment. 3 Cr. (1-6).

FOR 124
**ADVANCED FOREST MENSURATION**
Quality determination of logs and trees. Estimating volumes of large timber areas by different sampling techniques. The use and interpretation of aerial photos in forest surveys. 3 Cr. (2-3).

FOR 126
**FOREST ECOLOGY AND WILDLIFE MANAGEMENT**
Introduction to ecology, upon which the management of forest and wildlife resources may be based. Increases the student's understanding of the ecological relationship of forest and wildlife communities.
3 Cr. (2-3).

FOR 232
**FOREST SURVEYING II**
Theory and practice of plane surveying techniques for application in property and boundary surveys, map making, construction surveys, and computations. Special emphasis on forestry applications of these principles. 3 Cr. (2-3). *Prerequisite: FOR 121.*

FOR 233
**EQUIPMENT AND MACHINERY**
The operation, care and maintenance of logging machinery, forest fire control equipment and related mechanical devices in common use in forest operations. 3 Cr. (2-3).

FOR 234
**TIMBER HARVESTING**
The felling, skidding, and transportation of timber products from the woods to the point of manufacture. Application of modern logging methods and techniques, including the breakdown of entire tree stems into lengths and units of highest economic value. 3 Cr. (2-3).

FOR 236
**SILVICULTURE**
The study of forestry practices and systems used in the establishment and management of trees for the sustained production of timber products. 3 Cr. (2-3).

FOR 242
**FOREST PRODUCTS**
The conversion of round timber products into a semi-finished state, and the manufacture of these raw materials into finished consumer products. Includes the seasoning of lumber and the preservative treatments of wood to improve its usefulness. 3 Cr. (2-3).

FOR 247
**FOREST LAND MANAGEMENT AND RECREATION**
Basic concepts of multiple use management of publicly and privately owned forest lands. Shows the importance of managing the land for recreation, wildlife, and water. 3 Cr. (2-3).

FOR 248
**FOREST PROTECTION**
The causes, effects, and methods of control of forest fires. The identification, effects and control of other harmful agents, principally insects and diseases. 3 Cr. (3-0).

# G

## GEOGRAPHY (GEO)

GEO 101
**PHYSICAL GEOGRAPHY**
Introduction to topographic maps, landforms, weather elements, climates, soils, and vegetation. 3 Cr. (3-0).

## GEOLOGY (GEL)

GEL 105
**PHYSICAL GEOLOGY**
Basic concepts in the study of the Earth; relationships between Earth materials and the geologic agents and processes that create and modify minerals, rocks, landforms, continents, and the ocean basins. 4 Cr. (3-3).

GEL 106
**HISTORICAL GEOLOGY**
Origin of the Earth, evolution of its crust, and the development and evolution of life thereon; relationships among rock units as evidence for geologic history; fossils as documents of evolution, chronology and environment; relative and absolute age dating of the Earth. 4 Cr. (3-3). *Prerequisite: GEL 105.*

GEL 290
**SPECIAL STUDIES IN GEOLOGY**
Special attention to particular abilities and interests of students. Individual guidance in advanced studies. Admission by permission of the instructor. (1-3, laboratory as required).

## GERMAN (GER)

GER 111
**BEGINNING GERMAN I**
Basic grammar and language structure. Comprehension, speaking and reading, with particular regard to pronunciation and accent. 3 Cr. (3-0). *Prerequisite: Permission of the instructor.*

GER 121
**BEGINNING GERMAN II**
Continuation of GER 111. 3 Cr. (3-0). *Prerequisite: GER 111.*

## GOVERNMENT (GOV)

GOV 231
**AMERICAN GOVERNMENT—NATIONAL**
Federal government, its powers and organization. Functions of legislative, executive and judicial branches. Our federal system as it has developed. 3 Cr. (3-0).

GOV 241
**STATE AND LOCAL GOVERNMENT**
State and local governmental institutions, their functions and responsibilities; intergovernmental relations. 3 Cr. (3-0).

GOV 290
**SPECIAL STUDIES IN GOVERNMENT**
Special attention to particular abilities and interests of students. Individual guidance in advanced studies. Admission by permission of the instructor. 1-3 Cr. (1 to 3-0).

## GRAPHIC ARTS (GCO)

GCO 511
**LAYOUT AND DESIGN**
Analysis of materials, tools and techniques used in preparation of copy for reproduction; paste-up and color separation overlays. 4 Cr. (2-6).

GCO 512
**TYPOGRAPHIC COMPOSITION**
Fundamentals of typesetting. Theory and practice in the care and use of composing machines, both hot and cold (mechanical) and cold (photo). 4 Cr. (2-6).

GCO 515
**LAYOUT AND DESIGN**
Offered to students who are enrolled in curricula other than Graphic Arts. Analysis of materials, tools and techniques used in preparation of copy for reproduction; paste-up and color separation overlays. 3 Cr. (2-3).

GCO 516
**TYPOGRAPHIC COMPOSITION**
Offered to students who are enrolled in curricula other than Graphic Arts. Fundamentals of typesetting. Theory and practice in the care and use of composing machines, both hot and cold (mechanical) and cold (photo). 3 Cr. (2-3).

GCO 521
**PROCESS CAMERA**
Concepts and techniques of darkroom procedure for reproduction of line and halftone copy on process cameras. 4 Cr. (2-6).

GCO 522
**FILM ASSEMBLY AND IMPOSITION**
A study and application of various methods of assembling negatives and positives in the form of flats in preparation for making offset plates. 4 Cr. (2-6).

GCO 525
**PROCESS CAMERA**
Offered to students who are enrolled in curricula other than Graphic Arts. Concepts and techniques of darkroom procedure for reproduction of line and halftone copy on process cameras. 3 Cr. (2-3).

GCO 526
**FILM ASSEMBLY AND IMPOSITION**
Offered to students who are enrolled in curricula other than Graphic Arts. Study and application of various methods of assembling negatives and positives in the form of flats in preparation for making offset plates. 3 Cr. (2-3).

GCO 631
**PLATEMAKING, SUBSTRATES AND FINISHING**
Identification, selection, and relationship of paper and board stocks, non-printing conversions for the printing, publishing, and allied industries. Theory and application relating to various types of offset plates and processing procedures. 4 Cr. (2-6).

GCO 632
**PRESS OPERATIONS**
Correlation of printing press operation; ink mixing and matching, registration preventive maintenance for quality analysis. 4 Cr. (2-6).

GCO 635
**PRINTING ESTIMATING PRACTICES**
Theory and practice in estimating jobs, writing specifications and planning jobs for production. 3 Cr. (3-0).

GCO 641
**ADVANCED TYPOGRAPHIC COMPOSITION**
Advanced study and application of GCO 511 and GCO 512. Special emphasis placed on photo composition as it relates to the composition industry. Students will be involved with individual projects and/or live work. 3 Cr. (1-6). *Prerequisites: GCO 511, GCO 512.*

GCO 642
**ADVANCED PROCESS CAMERA AND STRIPPING**
Advanced study in black and white tone reproduction, special effects and basic color procedures. Advanced work in color stripping and photo-art techniques. 3 Cr. (1-6). *Prerequisites: GCO 521, GCO 522.*

GCO 645
**PRINTING PROCESSES**
Theory and application of the four major printing processes: letterpress, lithography, gravure, and silk screen. 3 Cr. (1-6).

# H

## HEATING AND AIR CONDITIONING (HAC)
Courses offered at Lewisburg Federal Penitentiary.

HAC 711
**HEATING AND AIR CONDITIONING I**
Introduction to heating and air conditioning systems; use of tools of trade; board wiring, control functions, gas burner theory and servicing, IBR heating. 22 Cr. (19-9).

HAC 721
**HEATING AND AIR CONDITIONING II**
Study of IBR cooling, radiation as applied to heating and cooling, piping hydronics, duct design and installation, steam systems. 22 Cr. (19-9).

HAC 731
**HEATING AND AIR CONDITIONING III**
Installation of systems, heating servicing and troubleshooting; introduction to solar heating; cooling theory and servicing. 22 Cr. (19-9).

## HISTORY (HIS)

HIS 111
**WESTERN CIVILIZATION I**
Survey and analysis of major intellectual, social, political, and economic developments of western civilization from ancient times until the 18th Century. 3 Cr. (3-0).

HIS 121
**WESTERN CIVILIZATION II**
Survey and analysis of major intellectual, social, political, and economic developments of western civilization from the 18th Century until the present. 3 Cr. (3-0).

HIS 231
**UNITED STATES—SURVEY I**
Political, economic, and social development of the United States from colonial times to and including the Civil War and the Reconstruction Period. 3 Cr. (3-0).

HIS 241
**UNITED STATES—SURVEY II**
Political, economic, and social development of the United States from 1877 to and including the current Civil Rights Movement. 3 Cr. (3-0).

HIS 290
**SPECIAL STUDIES IN HISTORY**
Individual guidance in advanced studies. Admission by permission of the instructor. 1-3 Cr. (1 to 3-0).

# J

## JOURNALISM (JOU)

JOU 111
**NEWS WRITING**
Techniques of basic news writing for print media and of covering a news beat. Emphasis on organizing the story and rewriting to develop skill. Detailed critiques and class discussion of student writing. 3 Cr. (3-0).

JOU 113
**PRINCIPLES OF NEWS PHOTOGRAPHY**
Introduction to photography with an adjustable camera and auxiliary equipment. Emphasis is on techniques for producing news photos in black and white, such as lighting, imaginative posing, action. Course assumes no previous experience. Students must furnish camera. 3 Cr. (2-3).

JOU 121
**REPORTING PUBLIC AFFAIRS**
Development of news writing skills through class assignments and news beat coverage. Emphasis on deadlines and tight but complete writing. Focus on public events reporting in practicum and in the field. 3 Cr. (3-0). *Prerequisite: JOU 111.*

JOU 122
**INTRODUCTORY NEWSPAPER PRODUCTION**
Beat reporting and writing for student publications and/or the College information services under deadline pressure. Includes basics of mechanical production and publication planning. 2 Cr. (0-6). *Prerequisite: JOU 111.*

JOU 231
**FEATURE WRITING**
Survey of structure of news features, "brites", color stories, and sidebars. Techniques of interviewing and researching feature stories. Writing of feature stories with goal of publication. 3 Cr. (3-0). *Prerequisite: JOU 111.*

JOU 232
**COPYREADING AND EDITING**
Preparing material for publication with the legal and ethical standards being considered: judicious editing, copyreading, headline writing, picture editing, typography, layout and planning relative to print media production. 3 Cr. (3-0). *Prerequisites: JOU 111 and JOU 121, or GCO 515, or permission of the instructor.*

JOU 233
**NEWSPAPER MANAGEMENT AND PRODUCTION**
Service in a responsible, managerial position with student publications or in College information services. Focus on development of skill in news judgement, planning, and production. Students must have demonstrated ability to complete assignments with minimal supervision. Students must be able to coordinate individualized instructional consultations. 2 Cr. (0-6). *Prerequisite: JOU 122.*

JOU 241
**NEWSPAPER ORGANIZATION AND COMMUNITY RESPONSIBILITY**
Problems of law, finance, personnel, promotion, technological change, and community service involved in the management and publishing of newspapers in the United States. 3 Cr. (3-0). *Prerequisite: JOU 121.*

JOU 242
**INTERNSHIP**
On-the-job training with local or area media or with related business. 2 Cr. (0-6). *Prerequisites: JOU 232, JOU 233.*

# M

## MACHINE TOOL TECHNOLOGY & MACHINIST GENERAL (MTT)

MTT 511
**MACHINING I (8 weeks)**
Use of hand tools to produce layouts and objects by hand, simple filing, sawing, assembling, use of drill presses, drill sharpening; drilling to a layout, drill jigs. Producing parallel and square surfaces, shaping rectangular objects. 5 Cr. (5-15).

MTT 512
**MACHINING II (8 weeks)**
The theory of grinding tool bits: turning, facing, boring and thread cutting on the lathe. Practice in end milling, slab and plain milling. Practice in power tapping machines. 5 Cr. (5-15).

MTT 521
**AUTOMATIC MACHINES (8 weeks)**
Fundamental concepts of metal removal employing multi-tooling machining processes. Use and care of carbide tooling to obtain maximum effort. Instruction will center on turret lathes, automatic screw machines, automatic power tapping machines. 5 Cr. (5-15).

MTT 522
**INDUSTRIAL METROLOGY (8 weeks)**
The use of precision instruments such as verniers, various types of comparators, Rockwell hardness testing, toolmakers scope, flatness checking, surface plate work including the use of the sine bar, advanced blueprint reading, introduction to metric measurements, and controlling quality of work by sampling method. 5 Cr. (5-15).

MTT 631
**TOOLING TECHNOLOGY I (8 weeks)**
Theory and practice in machining, cutting and assembly of precision die parts, layout and boring to close tolerance in jigs and fixtures. Knowledge and practice in machining different types of threads and their application. 5 Cr. (5-15).

MTT 632
**TOOLING TECHNOLOGY II (8 weeks)**
Understanding and practice in operation of numerically controlled machining center types of machines and coding methods involved, machining of gears, terminology of gears, power transmission and indexing methods, simple, differential and helical milling. 5 Cr. (5-15).

MTT 641
**ABRASIVE MACHINING (8 weeks)**
Theory and practice in surface, cylindrical, internal, and jig grinding, grinding of threads, taps, electrical chemical grinding, and electrical discharge machining are included. 5 Cr. (5-15).

MTT 642
**HEAT TREATMENT AND CUTTER GRINDING (8 weeks)**
Theory and practice in hardening and tempering of various kinds of metal, carburizing, case hardening, annealing, normalizing, and forging of steel. Grinding of all types of tools and cutters is included. 5 Cr. (5-15).

## MARKETING/MERCHANDISING (MKT)

MKT 234
**RETAIL MERCHANDISING I**
This course is designed to familiarize students with the field of retailing. It will provide the technical and theoretical knowledge necessary for retail management employment. 3 Cr. (3-0).

MKT 240
**MARKETING**
This course illustrates various methods of merchandising and the channel of distribution from producer or manufacturer to the ultimate consumer. Government regulations, pricing, cost and branding, influence of buyers and consumers on marketing programs and current marketing trends are presented. 3 Cr. (3-0).

MKT 243
**SALES**
Sales examines the positive role personal selling plays in the American economy and documents the extent to which selling has aided in our economic growth. This course is designed to show the sales role in helping customers recognize and satisfy wants and needs, and how this satisfaction can lead to a higher standard of living. 3 Cr. (3-0).

MKT 244
**RETAIL MERCHANDISING II**
This course continues concepts to help build an understanding and appreciation of activities needed to make a retail business succeed. These activities will have an emphasis on information systems through electronic data processing. Retailing is studied from the viewpoint of a middle manager in a large retailing firm as well as a manager of one's own business. 3 Cr. (3-0).

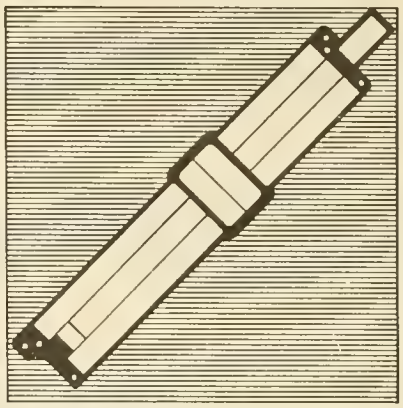
MKT 246
**FASHION MERCHANDISING**
This course is designed to familiarize students with the field of fashion merchandising. It will provide the technical and theoretical knowledge necessary for fashion management. 3 Cr. (3-0).

## MATHEMATICS (MTH)

MTH 001
**ARITHMETIC**
Comprehension of the basic concepts and skills of arithmetic to prepare students for required mathematics courses. Pre and post-tests are used to prescribe and insure mastery of units covered.
3 Institutional Cr. (3-0).

MTH 002
**BASIC ALGEBRA**
Basic skills and concepts of arithmetic and algebra are presented according to the learner's aptitudes and needs. Pre and post-tests are used to prescribe and insure mastery of units covered. The course may require more than one semester for mastery of the objectives.
3 Institutional Cr. (3-0).

MTH 101
**INTRODUCTION TO MATHEMATICS I**
Explorations with number and geometric patterns, problem solving, mathematical recreations, flow charts, sets, logic, systems of numeration, an introduction to algebra, and other selected topics. Intended as a general education course for non-mathematics or science majors. 3 Cr. (3-0). *Prerequisite: One year of high school mathematics.*



MTH 102
**INTRODUCTION TO MATHEMATICS II**
Mathematical systems, properties of integers, rational, real and complex numbers, selected topics from geometry, probability, and statistics. Intended as a general education course for non-mathematics or science majors. 3 Cr. (3-0). *Prerequisite: MTH 101.*

MTH 103
**COLLEGE ALGEBRA**
Properties of real numbers, basic algebraic operations, relations and functions, equations and inequalities, basic right triangle trigonometry, sine and cosine laws. Designed for general studies and technology students desiring a thorough precalculus algebra background.
3 Cr. (3-0). *Prerequisite: Two years of high school algebra, and MTH 002 or MTH 105, or placement by examination.*

MTH 104
**COLLEGE TRIGONOMETRY**
Continuation of MTH 103. Circular, trigonometric, inverse, exponential, and logarithmic functions, complex numbers, polar coordinates, determinants, systems of equations, and other selected topics. 3 Cr. (3-0).
*Prerequisite: MTH 103 or placement by examination.*

MTH 105
**INTERMEDIATE ALGEBRA**
Properties of real numbers, polynomials, fractions, exponents, roots, and radicals, first and second degree equations and inequalities in one variable, functions, graphs, and other selected topics. Intended for students without a strong working knowledge of algebra. 3 Cr. (3-0). Cannot be used to satisfy general studies requirement. Cannot be used as elective credit in programs requiring MTH 103. *Prerequisite: One year of high school algebra or placement by mathematics exam.*

MTH 107
**APPLIED CALCULUS**
Relations and functions, conics, limits, derivatives and integration of algebraic functions, trigonometric functions and transcendental functions, methods of integration and applied problem solving. Is excellent preparation for students who intend to sit for the Engineer in Training Examination. 3 Cr. (3-0). *Prerequisite: College algebra and trigonometry or permission of instructor.*

MTH 201
**ELEMENTARY STATISTICS I**
An introduction to frequently applied statistical methods; descriptive statistics, frequency distributions, elementary probability, binomial and normal distributions, Central Limit Theorem, statistical inference and tests of hypotheses, Chi-square and t-tests. Intended for general studies and technology students desiring a basic working knowledge of statistics. 3 Cr. (3-0). *Prerequisite: One year of high school algebra.*

MTH 202
**ELEMENTARY STATISTICS II**
Continuation of MTH 201, with emphasis on applied statistical techniques and design of experiment; Student T, Chi-square, F-tests, linear regression, correlation, and models; analysis on enumerative data; analysis of variance; non-parametric statistics. To be offered regularly in the Spring Term of even numbered years. 3 Cr. (3-0). *Prerequisite: MTH 201.*

MTH 204
**MATRIX ALGEBRA**
Matrices, determinants, inverse of a matrix, rank and equivalence, linear equations and linear dependence, vector spaces, linear transformations, characteristic equations of a matrix, bilinear, quadratic, and Hermintian forms. Recommended for computer science, science, and technology students. May be used as a core requirement or general elective for general studies students. To be offered regularly in the Spring Term of odd numbered years. 3 Cr. (3-0). *Prerequisite: Two years of high school algebra, MTH 103, or permission of instructor.*

MTH 238
**CALCULUS I**
Algebra review, functions, limits, continuity, derivatives, velocity, rates of change, chain rule, curve sketching, related rates, maximum-minimum theorems, differentials, applications, antiderivatives. 4 Cr. (4-0). *Prerequisite: MTH 103 and MTH 104, or placement by math exam, or permission of instructor.*

MTH 248
**CALCULUS II**
Continuation of MTH 238 with emphasis on the definite integral, applications of integration, transcendental functions, techniques of integration, and other selected topics. 4 Cr. (4-0). *Prerequisite: MTH 238.*

MTH 290
**SPECIAL TOPICS IN MATHEMATICS**
Special arrangements of individuals or groups to study topics of interest, i.e., Differential Calculus, Modern Algebra, Modern Geometry. Arrangement to be made through instructor and Division Director. One to four credits per course.

MTH 500
**TECHNICAL MATHEMATICS II**
Topics from algebra, geometry, right triangle trigonometry, and others. Special emphasis on applications to practical problems in the student's area of concentration. 3 Cr. (3-0). Cannot be used to satisfy math requirements for students in the General Studies Associate Degree program. *Prerequisite: MTH 710 or equivalent or permission of instructor.*

MTH 710
**TECHNICAL MATHEMATICS I**
Arithmetic operations with whole numbers, common and decimal fractions, per cent, basic principles of measurement, basic algebra, applied algebra, basic trigonometry, fundamentals of the metric system, and other selected topics for technical-vocational mathematics. Intended for students in certificate programs. 3 Cr. (3-0). Placement by mathematics examinations.

MTH 715
**GENERAL AVIATION MATHEMATICS**
Fundamental operations with common and decimal fractions, mixed numbers, square root algorithm, area, volume, ratio, signed numbers, and other selected topics. Intended for aviation maintenance technicians (AC). 3 Cr. (3-0).

## MEDICAL TERMINOLOGY (MTR)

MTR 101
**MEDICAL TERMINOLOGY I**
Introduction to medical terminology with emphasis on etiology, symptomatology, pathology, and diagnostic procedures. 3 Cr. (3-0).

MTR 102
**MEDICAL TERMINOLOGY II**
Continuation of MTR 101. Course is designed to develop the ability to read and understand the language of medicine. Emphasis on the meaning of root words and their combining forms. 3 Cr. (3-0). *Prerequisite: MTR 101.*

# O

## OPERATING ROOM TECHNICIAN (ORT) (SURGICAL TECHNOLOGY)

ORT 710
**BODY STRUCTURE AND FUNCTION**
Introduction to the structure and function of the human body: general plan, cell tissues and tumors, membranes, musculo-skeletal, nervous, circulatory, digestive, respiratory, reproductive, and endocrine systems. 5 Cr. (5-0).

ORT 711
**OPERATING ROOM TECHNIQUES I**
General introduction to hospitals and operating rooms. Job descriptions and qualifications. Professional, legal, moral, and religious responsibilities. Concepts of anesthesiology, asepsis, and safety. Related housekeeping skills. Personal health and hygiene. Techniques and skills of the operating room technician. Selected learning experiences in the operating room. 13 Cr. (10-10).

ORT 720
**OPERATING ROOM TECHNIQUES II**
The study of the condition of illnesses, operations, positioning, equipment, materials, and anesthesia used in the various surgical specialties with selected experience in the operating room.
4 Cr. (4-0).

ORT 721
**SUPERVISED CLINICAL EXPERIENCE**
Practical clinical experiences enabling the student to function at a beginning level as assistant circulator and scrub-in technician.
10 Cr. (2-24).

## ORNAMENTAL HORTICULTURE (FLR, NMG, OHT)

FLR 121
**GREENHOUSE CROP PRODUCTION I**
An introduction to greenhouse crop production with emphasis on environmental control, plant culture, facilities, and equipment. Includes demonstration of techniques. 3 Cr. (2-3).

FLR 122
**FLORAL DESIGN I**
Instruction and application of principles in the art of floral design, including form, styles, and composition. Includes designing floral arrangements, wreaths, sprays, baskets, bouquets, wedding flowers, and corsages. 3 Cr. (1-6).

FLR 232
**GREENHOUSE CROP PRODUCTION II**
Production of cut flowers and potted plants with emphasis on techniques used for important commercial crops. Each crop will be grown by students using school facilities. 3 Cr. (2-3).

FLR 233
**FLORAL DESIGN II**
A continuation of FLR 122 with the addition of designing dried and permanent arrangements. Stresses shop layout and familiarity with routine procedures in the operation of a flower shop. 3 Cr. (2-3).
*Prerequisite: FLR 122.*

FLR 243
**GREENHOUSE CROP PRODUCTION III**
Production of potted plants, bedding plants, and other crops using commercial techniques. Includes production, planning, crop rotation, and the role of management. 3 Cr. (2-3).

FLR 244
**FLOWER SHOP OPERATION**
Emphasizes buying, pricing, sales, inventory, personnel, record keeping, and general principles related to the commercial retail flower shop. Lab practice in perfecting design techniques and originality.
3 Cr. (2-3).

FLR 245
**HOUSE AND CONSERVATORY PLANTS**
Identification, culture, propagation and use of house and conservatory foliage plants. Course includes artificial lighting, indoor landscaping for home, malls and business, soils and fertilizers for commercial growing, insects, diseases, and cultural problems associated with foliage plants.
3 Cr. (2-3).

NMG 121
**NURSERY PRODUCTION I**
Classified nurseries and careers; covers aspects of garden center location, layout and design and merchandising techniques. Includes nursery structures and facilities, nursery equipment, plant growth, growth habits and pruning, nursery practices of ball and burlapping and transplanting. 3 Cr. (2-3).

NMG 126
**WOODY PLANTS II**
Continuation of OHT 115. Additional plants are studied with major emphasis on the study of deciduous trees, shrubs, vines, ground covers, and their varieties and cultivars. 3 Cr. (2-3).
*Prerequisite: OHT 115.*

NMG 232
**NURSERY PRODUCTION II**
Nursery aspects of plant propagation, with emphasis on field and container production techniques, production schedules, nursery soil management, weed control, and cost analysis. 3 Cr. (2-3).
*Prerequisite: NMG 121.*

NMG 237
**WOODY PLANTS III**
Advanced study of plant identification. Emphasis on the study of broad leaved and narrow leaved evergreens – their varieties and cultivars.
3 Cr. (2-3). *Prerequisites: NMG 126, OHT 115.*

NMG 245
**LANDSCAPE CONSTRUCTION**
Techniques used in the construction of landscape features such as patios, walks, retaining walls, fences, fountains, waterfalls, pools and steps using various construction materials. Includes establishment and maintenance of lawns and plantings. Specifications, bidding and pricing of landscape jobs are also covered. 3 Cr. (1-6).

NMG 248
**LANDSCAPE MAINTENANCE**
Covers aspects of turf management and tree care (arboriculture). Establishment and maintenance of different types of turf areas. Emphasis on golf course, institutional, park, and home turf areas. Shade tree planting, climbing, guying, pruning, fertilizing, cabling, and bracing. Stresses evaluation of ornamental trees and general care.
3 Cr. (2-3). *Prerequisites: OHT 115, OHT 239.*

NMG 249
**LANDSCAPE DESIGN**
Covers the principles and problems of landscape design. Emphasis on the proper and effective use of plant materials in developing domestic and public areas to make them as attractive and utilitarian as possible. Includes basic drawing and drafting principles. 3 Cr. (1-6).
*Prerequisites: NMG 126, OHT 115.*

OHT 114
**HORTICULTURE SOILS**
Study of soil texture, structure, organic matter, and plant nutrients as they are related to the use of lime and fertilizers. Synthetic soils and moisture-air relationships included. 3 Cr. (2-3).

OHT 115
**WOODY PLANTS I**
An introduction to the study of trees, shrubs and vines grown in nurseries for landscape purposes. The course stresses the identification and uses of woody plants. 2 Cr. (1-3).

OHT 116
**HERBACEOUS PLANTS**
A study of the classification, identification, and general culture of perennials, bulbs, and roses. Landscape use and design of flower borders is practiced. 3 Cr. (2-3).

OHT 234
**PLANT PROPAGATION**
Theory and practice of plant propagation by sexual and asexual means with applications in floriculture production, nursery production, and forestry. 3 Cr. (2-3).

OHT 239
**PLANT INSECTS & DISEASES**
Study of the insects and diseases of horticulture crops. The nature, structure, growth habits, injurious effects, and control of insects and related forms. The most common and injurious plant diseases are studied for identification and control. 3 Cr. (2-3). *Prerequisite: BIO 111.*

OHT 246
**HORTICULTURE MECHANICS**
Operation and maintenance of horticulture equipment to include small gasoline engines, electric motors, electrical fans, environmental controls, and other soil working and irrigation equipment. 3 Cr. (2-3).

# P

## PHILOSOPHY (PHL)

PHL 111
**INTRODUCTION TO PHILOSOPHICAL ANALYSIS**
Investigation of major perennial problems in philosophy: Meaning and Truth, Perception and External World; God, Mind and Body.
3 Cr. (3-0).

PHL 121
**ETHICS AND POLITICAL PHILOSOPHY**
Status of deontological language, free will and responsibility, major issues in contemporary political philosophy. 3 Cr. (3-0).

## PHYSICAL EDUCATION (PED)

The Physical Education requirements may be waived with permission of the Dean and the Director of Physical Education if the student has been in the Armed Services for at least one year of active duty or if it is determined that he/she should be excused because of age or physical condition.

PED 100
**PHYSICAL EDUCATION**
Two or more individual sports per semester. 1 Cr. (0-2).
Instruction in the fundamental skills necessary for individual and/or partner competition. Stress is placed on playing the game, rules and regulations, scoring, strategy, game courtesies, and choice of equipment. Examples of combinations offered are: Tennis/Bowling, Golf/Bowling, Badminton/Weight Training.

PED 120
**PHYSICAL EDUCATION**
Two or more team sports per semester. 1 Cr. (0-2).
Instruction and team participation in basic skill fundamentals, player positioning, strategy and rules as related to game situations. Generally one sport is played outdoors and one sport is played indoors. Examples of combinations offered are: Football/Volleyball/Basketball, Soccer/Volleyball/Basketball, Volleyball/Basketball/Softball, Volleyball/Basketball.

PED 140
**PHYSICAL EDUCATION**
One individual and one team sport per semester. 1 Cr. (0-2). Examples of combinations are: Archery/Volleyball, Badminton/Volleyball.

PED 160
**PHYSICAL EDUCATION**
One individualized sport or activity per semester. 1 Cr. (0-2). Examples are Swimming, Hatha Yoga, and Aerobic Dance. Sports offered at various times include:

**Adaptive Physical Education**
An individualized course designed to meet the specific needs of the student with a physical handicap. Depending upon the handicap, activities may be a combination of appropriate individual sports and/or a self-development program, such as Hatha Yoga or progressive general exercise.

**Aerobic Dance**
Vigorous physical activity combining locomotive movements for cardio-vascular endurance, exercise for muscle tone and flexibility, and basic dance steps for rhythmical development and coordination. The sequences are performed to a variety of musical scores.

**Gymnastics**
Instruction in movement skills, combinations and continuities in free exercise, and tumbling as performed on various gymnastic apparatus.

**Hatha Yoga**
A self-discipline designed to improve the efficiency of all body systems. Instruction and practice in asanas (movement patterns), techniques for complete breathing, and total body relaxation.

**Physical Fitness**
Instruction in the necessities of life-long physical fitness. May include a cardio-vascular efficiency program of walk-jog-run, rope jumping, exercises for specific parts of the body, such as the back and abdominal areas. Nutrition and diet will also be taught.

**Raquet Ball**
Instruction in the basic skills and playing strategy. Students will play singles and doubles matches. This life-long activity develops speed, agility, coordination, and, especially, endurance. Course is taught at the Williamsport YMCA.

**Scuba Diving**
Instruction and practice for the swimmer in basic diving techniques and the use of scuba equipment to meet the certification requirements as an Open Water Diver as prescribed by the Professional Association of Diving Instructors. Course is taught at the Williamsport YWCA.

**Square Dance**
Instruction in basic and advanced square dance steps, movement patterns, and terminology as applied to squares, longway sets, and mixers.

**Swimming, Beginning**
Instruction and practice for the non or novice swimmer in fundamental water safety survival skills, basic swim strokes, and non-swimming forms of rescue. Course is taught at the Williamsport YMCA.

**Weight Training**
Instruction in a developmental progressive program using the Universal Gym in either a 70% muscle building (male) or a 50% muscle toning (female) category. May include a cardio-vascular efficiency program in jogging, rope jumping, or running in place.

PED 161
**ADVANCED LIFESAVING**
Instruction and practice in the skills necessary to meet the requirements for certification in American Red Cross Advanced Lifesaving. The course includes some applicable basic first aid and information pertaining to swimming environments. Course is taught at the Williamsport YMCA. 2 Cr. (1-2).

PED 201
**PERSONAL AND COMMUNITY HEALTH**
Discussions of up-to-date, pertinent information concerning personal and community health problems of today's college student. The following topics will be included: mental health and personality development; human sexuality, marriage and parenthood; physical fitness and nutrition; and alcohol, tobacco, and drugs. 2 Cr. (2-0).

## PHYSICS (PHS)

PHS 100
**PHYSICS—MECHANICS**
Lecture, demonstrations, problem-solving course in elementary mechanics; basic concepts of scientific method; the metric systems; vectors, translatory motion; rotary motion, work, power, energy; physical properties of liquids, solids, gases. 4 Cr. (3-3).
*Prerequisites: MTH 103 or equivalent and one year of high school science. MTH 104 should be taken prior to or concurrent with PHS 100.*

PHS 101
**PHYSICS—HEAT AND LIGHT**
Basic principles of heat and its measurements: thermometry, calorimetry, expansion of liquids, solids, and gases, transfer of heat; study of light including refraction, illumination, optics and color. 4 Cr. (3-3). *Prerequisite: PHS 100.*

PHS 102
**PHYSICS—ELECTRICITY AND MAGNETISM**
Fundamental concepts of electrostatics, electrolysis; AC and DC circuits, magnetism; electromagnetic induction; basic principles of electricity. 4 Cr. (4-0). *Prerequisite: PHS 100.*

PHS 106
**INTRODUCTION TO METALLURGY**
Introduction to science of physical metallurgy; chemical composition, crystallization, effects of mechanical treatment: drawing, rolling, shaping; thermal or heat treatment. 4 Cr. (4-0). *Prerequisite: PHS 100.*

PHS 112
**INTRODUCTORY PHYSICS**
Fundamental laws and properties of matter, mechanics, heat and light with special emphasis on electricity and magnetism. 4 Cr. (3-3).

PHS 116
**GENERAL PHYSICS I**
Principles of mechanics and heat. Calculus will be used whenever this method leads to a more direct solution. 4 Cr. (3-3).
*Corequisite: MTH 238.*

PHS 122
**RADIATION PHYSICS**
The fundamentals of electrical and radiation physics and the principles underlying the operation of X-ray equipment and auxiliary devices. 3 Cr. (3-0). *Prerequisite: PHS 112.*

PHS 126
**GENERAL PHYSICS II**
Continuation of PHS 116. Principles of electricity, magnetism, wave motion, optics and sound. 4 Cr. (3-3). *Prerequisite: PHS 116. Corequisite: MTH 248.*

PHS 202
**MECHANICS**
Intermediate course in kinematics and dynamics. Differential and integral calculus are used extensively in derivations and problems. 4 Cr. (3-3). *Prerequisites: PHS 126 and MTH 248.*

PHS 236
**MODERN PHYSICS**
Atomic and nuclear physics including structures of atom and nucleus, radioactivity; fission and fusion; relativity; and the periodic table of elements. 4 Cr. (3-3). *Prerequisites: PHS 126 and MTH 248.*

PHS 500
**PHYSICS SURVEY**
Covers most of the following topics, selected to meet the needs of the majority of students in any particular section: matter and measurement; behavior of solids, liquids, and gases; mechanics, including forces, motion, energy, power, and machines; heat; sound; light; optics; magnetism; electricity; atomic phenomena. 3 Cr. (3-0). *Prerequisite: MTH 710.*

## PLUMBING AND HEATING (PLH)

PLH 711
**PLUMBING AND HEATING I (8 weeks)**
This course is designed to acquaint the student with the plumbing and heating trade. The use of hand and power tools of the trade. Materials of trade, i.e., cast iron, copper, plastics, galvanized steel and black iron, etc. Plumbing systems such as venting—drainage—public and private sewage systems and house services. (Excluding heating systems.) 6 Cr. (6-18).

PLH 712
**PLUMBING AND HEATING II (8 weeks)**
Theory and lab projects to demonstrate materials and methods used for installing domestic hot and cold water systems (excluding heat); well pump theory, installation and maintenance; set, trim and maintain basic plumbing fixtures. 6 Cr. (6-18).

PLH 721
**PLUMBING AND HEATING III (8 weeks)**
Introduction to residential blueprint reading and pipe sketching; material estimates and ordering; installation and repair of residential fixtures; design and construction of individual projects. 6 Cr. (6-18).

PLH 722
**PLUMBING AND HEATING IV (8 weeks)**
Introduction to commercial blueprint reading and isometric pipe sketching; material estimates and ordering; installation and repair of commercial fixtures; design and construction of cooperative group projects. 6 Cr. (6-18).

PLH 831
**PLUMBING AND HEATING V (8 weeks)**
This course is designed to develop the basic skills required to calculate heat loss for residential and commercial installation. Practicum involves calculating, designing, and laying out hot water heat system. Use of lead working tools, introduction to lead wiping, and pipe bending. Introduction to acetylene welding, cutting and silver soldering. 6 Cr. (6-18).

PLH 832
**PLUMBING AND HEATING VI (8 weeks)**
This course is designed to develop the basic skills required to lay out, size, and install the various Hydronic Hot Water Systems for residential and commercial installations. For gas, oil, and coal fired systems. 6 Cr. (6-18).

PLH 841
**PLUMBING AND HEATING VII (8 weeks)**
This course is designed to give the student an in-depth working knowledge of steam heat systems, boilers, accessories, traps, venting, heat distributing units and safety devices. Practicum offers the student an opportunity to design, lay out and actually install functioning steam mini-systems. System maintenance and troubleshooting is emphasized. 6 Cr. (6-18).

PLH 842
**PLUMBING AND HEATING VIII (8 weeks)**
Designed to prepare the student to enter the trade work force. Emphasizes techniques to open-the-door, clinch the job, and maintain employment. An effort will be made to secure gainful employment in the trade for each student. Practicum will involve compilation of letters of introduction, compilation of resumes. The use of sheet metal hand tools, materials and supplies, the functions of hot air heat systems and installation of actual hot air heat systems will be offered. The student will be introduced to the practical application of solar heating. Solar energy collection, storage and conversion to sensible heat will be employed. Actual on the job plumbing and heating will be performed. 6 Cr. (6-18).

## PRACTICAL NURSING (NUR)

NUR 710
**FOUNDATIONS OF NURSING**
Basic nursing knowledge and skills common to all areas of nursing practice. Emphasizes the basic needs of patients, utilizing individual patient situations, including physical hygiene, comfort, rest, nutrition; the process of developing, implementing, and evaluating nursing care plans is studied and used in patient care. Includes mental health concepts, rehabilitation needs, communication skills, drug preparation and administration, body mechanics, safety practice and basic concepts of asepsis. 12 Cr. (6-18).

NUR 711
**NURSING RELATIONSHIPS**
Orientation to the program; the learning process; communication skills; concepts of health; major health problems and agencies; trends in nursing; roles and characteristics of nurses; nursing organizations; legal and religious implications; range and scope of functions of the nurse; administrative lines; fundamentals of ethical, psychological, social and human relationships. 3 Cr. (3-0).

NUR 712
**SCIENTIFIC PRINCIPLES RELATING TO NURSING**
The location, description, and function of gross anatomical structures; common pathogens, their characteristics and methods of control; common elements found in the body and their relation to the body in health; the relation of physical properties to the functioning body; the process of metabolism and homeostasis; psycho-social and economic factors related to nutrition and dietary patterns, nutritional needs at all ages and under various conditions, the relation of nutrition to health; associated vocabulary. 6 Cr. (6-0).

NUR 723
**MEDICAL-SURGICAL NURSING—ELEMENTARY (15 weeks)**
Principles of patient care dealing with general medical and surgical conditions. Emphasis on the adult patient in relation to his or her needs; the cause, treatment, and the prevention of illness; the nursing care involved. The student will be expected to function progressively as a contributing member of the nursing team, and to develop and carry out patient centered care plans geared to patient needs. Added skills are acquired in nursing procedures. 9 Cr. (6-18). (15 weeks-lecture/7 weeks-lab). *Prerequisite: NUR 710.*

NUR 724
**PARENTAL AND CHILD HEALTH (15 weeks)**
Focuses on the concept of the family as a unit of society. Helps prepare the student for patientside experiences with prenatal, intrapartum and post partum mothers, and the well and ill child. Growth and development, history, current trends, and community agencies in parental and child health are included. Deviations from normal are considered, but the emphasis is on normal aspects. The student participates in the care of these individuals. 9 Cr. (6-18). (15 weeks-lecture/8 weeks-lab). *Prerequisite: NUR 710.*

NUR 735
**MEDICAL-SURGICAL NURSING—INTERMEDIATE (15 weeks)**
Continuation of NUR 723. Further develops the knowledge and skills which enable the student to provide nursing care which meets the needs of patients of all ages with major health problems. Development of skills in assisting with critically ill, unconscious, moribund and mentally ill patients. 18 Cr. (12-18). *Prerequisites: NUR 723 and NUR 724.*

NUR 736
**PRACTICUM**
Students will be assigned to the cooperating institutions for three weeks to further develop skills in nursing procedures and patient care. 2 Cr. (0-75). *Prerequisite: NUR 735.*

## PSYCHOLOGY (PSY)

PSY 111
**GENERAL PSYCHOLOGY**
Introduction to the science of human behavior. 3 Cr. (3-0).

PSY 201
**ABNORMAL PSYCHOLOGY**
Principal forms of mental and emotional disorders with emphasis on their causes, symptoms, and courses of treatment. Goal to study normal behavior by examining such behavior in distortion or in exaggeration. 3 Cr. (3-0). *Prerequisite: Permission of the instructor.*

PSY 203
**DEVELOPMENTAL PSYCHOLOGY**
Psychological development and change throughout the life span, with emphasis on basic principles of child and adolescent development, genetic and environmental influences on the course of physical, motor, intellectual, emotional, social, and personality development. 3 Cr. (3-0). *Prerequisite: PSY 111.*

PSY 231
**EDUCATIONAL PSYCHOLOGY**
Psychological principles and concepts applied to learning. Individual differences, motivation and emotion. 3 Cr. (3-0). *Prerequisite: PSY 111 or permission of the instructor.*

PSY 241
**SOCIAL PSYCHOLOGY**
Interaction of individuals in their several group relations, the contacts of harmony, and conflict within groups as well as between groups, group leadership and group controls, phenomena of imitation and suggestion. 3 Cr. (3-0). *Prerequisite: Permission of the instructor.*

PSY 290
**SPECIAL STUDIES IN PSYCHOLOGY**
Special attention to particular abilities and interests of students. Individual guidance in advanced studies. Admission by permission of the instructor. 1-3 Cr. (1-3-0).

# R

## RADIOLOGIC TECHNOLOGY (RAD)

RAD 110
**RADIOLOGIC TECHNOLOGY I**
Basic concepts of ethical principles and medical structure. Chemical constituents of processing a radiographic film and efficient darkroom (processing) procedures. Theoretical and practical instruction on radiographic positioning of body structure and organs. Manipulation of exposure factors pertaining to milliamperage, kilovolts, distance, and time. 5 Cr. (3-13).

RAD 120
**RADIOLOGIC TECHNOLOGY II**
Theory of x-ray technique. Necessity of different radiographic views to avoid superimposition of structure. The involvement of contrast media in relation to reactions, and contraindications to these media. Emphasis on nursing procedures as they relate to radiology. 7 Cr. (4-16).

RAD 200
**SUMMER INTERNSHIP**
Required internships to establish eligibility for registry examination. Internships to be arranged with affiliated hospitals. 0 Cr.

RAD 230
**RADIOLOGIC TECHNOLOGY III**
Create a working combination or establish a new combination of exposure factors using x-ray components to produce an interpretive film. Advanced positioning of special radiographic views to demonstrate various anatomical parts. Introduces the operating suite with relationship of medical aseptic technique and radiographic procedures. Emphasis on technical special radiographic procedures. 10 Cr. (5-15).

RAD 240
**RADIOLOGIC TECHNOLOGY IV**
Organization, supervision, law, and finance related to radiology. Emphasizes handling diseased and injured patients. Introduces the role of radiation therapy in treatment of disease, effects on body tissue, and the methods of radiation therapy. Basic concepts of scientific research. 10 Cr. (5-15).

## REAL ESTATE (RES)

RES 112
**REAL ESTATE PRINCIPLES**
An introduction to real estate as a profession and study of: principles, the market, types of ownership and interest, contracts, transferring property, financing, control and brokerage. This course can be applied toward the salesperson's license. 3 Cr. (3-0).

RES 113
**REAL ESTATE LAW**
This course covers the legal aspects of buying, selling, and holding real estate. This course can be used for the salesperson's license. 3 Cr. (3-0). *Prerequisite: RES 112 or Division permission.*

RES 114
**REAL ESTATE APPRAISAL**
Elementary principles and practices of appraising residential real estate, with in-depth study of the three approaches used to arrive at estimated value. 3 Cr. (3-0). *Prerequisite: RES 112 or Division permission.*

RES 115
**REAL ESTATE SALES**
This course will teach the basic techniques needed to become a successful real estate salesperson. 3 Cr. (3-0). *Prerequisite: RES 112 or Division permission.*

RES 116
**REAL ESTATE FINANCING**
This course will train the average real estate salesperson to put together a money package to successfully close a real estate deal. This course will also acquaint students with sources of funds available, methods to be used, and regulations to be aware of in purchasing, selling, or acting as an agent to sell real estate. 3 Cr. (3-0). *Prerequisite: RES 112 or Division permission.*

RES 117
**REAL ESTATE MANAGEMENT**
This course introduces the student to the basic managerial theories and strategies relating to the real estate field. This course can be used for the real estate broker's license. 3 Cr. (3-0). *Prerequisite: RES 112 or Division permission.*

RES 119
**REAL ESTATE MATH**
This course covers the basic mathematics used by real estate professionals. Course credits can be applied only toward the broker's license. However, the subject matter covered is ideal as a review for individuals taking the salesperson's exam. 3 Cr. (3-0). *Prerequisite: RES 112 or Division permission.*

RES 120
**REAL ESTATE TAXES**
This course will emphasize the basic tax structure in our economy as it relates to the real estate field. This course can be used for the salesperson's and broker's license. 3 Cr. (3-0). *Prerequisite: RES 112 or Division permission.*

RES 212
**REAL ESTATE PRINCIPLES II**
This course is a more advanced and in-depth study of the principles of financing, transferring property, contracts, various types of ownership as they relate to real estate. This course can be used for both the salesperson's and broker's license. 3 Cr. (3-0). *Prerequisite: RES 112 or Division permission.*

# S

## SECRETARIAL SCIENCE (CLS & SEC)

CLS 717
**CLERICAL PROCEDURES**
Office procedures and management of general office situations. Includes handling mail, filing, reception work, office machines, office communication systems, development of personal qualities necessary for success, self-evaluation, good working habits and attitudes, and personality development. 7 Cr. (5-6).

CLS 728
**CLERICAL WORKSHOP**
Includes instruction in the typewriting of reports, office forms, statistics, and other production work. Instruction in the use of the more common types of duplicating equipment is given. Students will operate the mimeograph and spirit duplicating machines and become familiar with the more common dictation and transcription equipment used in offices. Simulated office assignments and situations are incorporated into the program. 8 Cr. (6-6). *Prerequisites: CLS 717, SEC 111.*

SEC 111
**TYPEWRITING I**
Develops a foundation in the skill of typewriting. Includes familiarization with the typewriter, development of proper attitudes, fundamentals of touch typewriting, improvement of speed and accuracy, business letters, tabulations, and typing of numerous forms. 3 Cr. (2-3).

SEC 114
**SHORTHAND I**
Basic theory and techniques of Gregg Shorthand, Diamond Jubilee Series. Emphasizes outlines, proper techniques, and attainment of fluency in reading and writing shorthand. Dictation is given at 60+ words per minute for three minutes, to be transcribed with a 95+ percent level of accuracy. 3 Cr. (2-3).

SEC 121
**TYPEWRITING II**
Furthers the student's ability in typewriting. Emphasizes production typing, tabulation, special skill techniques, advanced letter writing, typing forms and documents, and other routine typewriting duties. 3 Cr. (2-3). *Prerequisite: SEC 111 or test qualification.*

SEC 124
**SHORTHAND II**
Continuation of SEC 114. Emphasizes the development of skills in taking dictation and transcription. Typewritten transcription is included. Dictation is given at 80+ words per minute for three minutes, to be transcribed with a 95+ percent level of accuracy. 3 Cr. (2-3). *Prerequisite: SEC 114 or test qualification.*

SEC 129
**SECRETARIAL PROCEDURES**
Introduction to the responsibilities and the opportunities of the secretarial position. Emphasizes administrative aspects of secretarial work. Includes office forms, mailing operations, filing, communications, business machines, duplicating processes, and dictating and transcribing machines. 3 Cr. (2-3).

SEC 231
**TYPEWRITING III**
Designed for the typist with a sustained, high level, accurate, straight copy speed. Provides an opportunity to master basic typing arrangements, to review and apply technical information, and to develop creativeness and originality. Includes higher levels of executive typing – following directions, editing copy, composing letters, creating arrangements of tables, and other involved typewriting projects. 3 Cr. (2-3). *Prerequisite: SEC 121.*

SEC 234
**SHORTHAND WORKSHOP**
Intensive review of advanced Gregg Shorthand with emphasis on executive, legal, or medical vocabulary. Dictation is given at 100+ words per minute for three minutes, to be transcribed with a 95+ percent level of accuracy. Students are given intensive training in the transcription of letters and specialized forms. Development of supplemental skills necessary for secretarial responsibilities is emphasized. 6 Cr. (4-6). *Prerequisite: SEC 124.*

SEC 244
**SECRETARIAL WORKSHOP**
Integrates all phases of advanced dictation, transcription, and secretarial skills. Dictation is given at 100+ words per minute for three minutes, to be transcribed with a 98+ percent level of accuracy. Includes intensive office-level practice. 8 Cr. (5-9). *Prerequisite: SEC 234.*

SEC 245
**OFFICE INTERNSHIP**
Practical experience obtained through work assignments in offices. 1 Cr. (0-5).

SEC 709
**TYPEWRITING**
For non-business students. Includes touch typewriting, speed and control, familiarization with business letters, reports and forms, and personal typewriting. 1 Cr. (0-3).

## SERVICE & OPERATION OF HEAVY CONSTRUCTION EQUIPMENT (SOE)

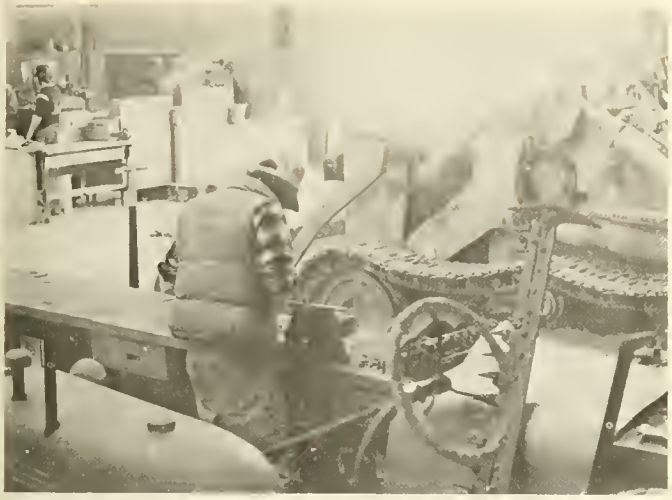
SOE 713
**SERVICE AND OPERATION I (8 weeks)**
Introduction to heavy equipment mechanics, starting with basic tools, micrometers, lifting equipment, and progressing into complete engine nomenclature and overhaul. 7 Cr. (7-18).

SOE 714
**SERVICE AND OPERATION II (8 weeks)**
Basic vehicle electrical systems including electro-magnetism, ignition circuits, starting circuits, and electric troubleshooting. 7 Cr. (7-18).

SOE 723
**SERVICE AND OPERATION III (8 weeks)**
Introduction to the maintenance and repair of diesel engines, various types of clutches, gear type transmissions, and differentials. Maintenance of seals and anti-friction bearings. 6 Cr. (6-19).

SOE 724
**SERVICE AND OPERATION IV (8 weeks)**
Introduction to the maintenance and repair of final drives, undercarriages, tracks, and tires. Maintenance and repair of brake systems. 6 Cr. (6-19).

SOE 835
**SERVICE AND OPERATION V (8 weeks)**
Introduction to the various types of hydraulic systems used on heavy construction equipment including pumps, motors, valves, cylinders, etc. 6 Cr. (6-19).



SOE 836
**SERVICE AND OPERATION VI (8 weeks)**
Introduction to the service, repair, testing, and troubleshooting of torque converters and power shift transmissions. Introduction to the hydrostatic transmission and testing of the hydrostatic transmission. Advanced electrical circuits and troubleshooting. 6 Cr. (6-19).

SOE 847
**SERVICE AND OPERATION VII (8 weeks)**
Introduction to basic construction surveying, construction blueprint reading, and grade stake reading. Operation of various types of heavy construction equipment such as dozers, loaders, motor graders, and scrapers. Service of the machines operated. 6 Cr. (6-19).

SOE 848
**SERVICE AND OPERATION VIII (8 weeks)**
A continuation of SOE 847 emphasizing the development of skills as an equipment operator or mechanic. 6 Cr. (6-19).

## SIGN PAINTING (SIG)

SIG 711
**SIGN PAINTING I**
Introduction to sign painting as related to the basic alphabet, the drawing alphabet and the fundamentals of alphabets. Use, care, and understanding of sign painting tools and materials. Emphasis in the development of skill with a variety of brushes. 10 Cr. (3-22).

SIG 721
**SIGN PAINTING II**
Emphasis on laying out and painting, paper signs, and showcards. Instruction in commercial signs, truck and window lettering is provided. Use of tempera and bulletin colors is covered.
10 Cr. (3-22).

SIG 811
**SIGN PAINTING III**
During the advance phase, billboard lettering, commercial signs and pictorial work are covered. Use of bulletin colors and lettering quills is introduced in this segment of instruction. 10 Cr. (3-22).

SIG 821
**SIGN PAINTING IV**
Designed to allow the student to continue practicing showcard layout and commercial signs. Gold leaf applications, glass, and surface gilding are covered. 10 Cr. (3-22).

## SMALL ENGINE REPAIR (SER)
Courses offered at Lewisburg Federal Penitentiary.

SER 711
**SMALL ENGINE REPAIR (12 weeks)**
The Small Engine Repair course is designed to give the individual a saleable skill in the field of small engine repair. Repair and maintenance of engines commonly used in lawn mowers, boat motors, snowmobiles, chain saws, and others in this classification are covered. 14 Cr. (10-25).

## SOCIOLOGY (SOC)

SOC 111
**INTRODUCTION TO SOCIOLOGY**
An introduction to the basic concepts and methods used in studying the group life of human beings. 3 Cr. (3-0).

SOC 112
**GENERAL ANTHROPOLOGY**
Survey of the physical and cultural evolution of humans and society. Emphasizes the relationship of the human physical structure to behavior and comparative descriptions of recent primitive societies. 3 Cr. (3-0).

SOC 121
**INTRODUCTION TO SOCIAL WORK**
Basic concepts of social welfare programs, social case work, and field work. Especially designed for students planning a career in social work. 3 Cr. (3-0). *Prerequisite: SOC 111.*

SOC 231
**MARRIAGE AND THE FAMILY**
Examination of traditional and contemporary American marital and family relationships. 3 Cr. (3-0). *Prerequisite: SOC 111.*

SOC 241
**URBAN SOCIOLOGY**
The concept of community as it operates and affects individual and group behavior in rural, suburban, and urban settings. Emphasizes characteristic institutions and problems of modern city life. 3 Cr. (3-0). *Prerequisite: SOC 111.*

SOC 242
**CRIMINOLOGY**
The social relationships and situations involved in the causes and prevention of crime and juvenile delinquency. Particular emphasis on the functioning of the U.S. criminal justice system. 3 Cr. (3-0). *Prerequisite: SOC 111.*

SOC 290
**SPECIAL STUDIES IN SOCIOLOGY**
Special attention to particular abilities and interests of students. Individual guidance in advanced studies. Admission by permission of the instructor. 1-3 Cr. (1 to 3-0).

## SPANISH (SPA)

SPA 111
**BEGINNING SPANISH I**
Basic grammar and language structure. Comprehension, speaking and reading, with particular regard to pronunciation and accent. 3 Cr. (3-0).

SPA 121
**BEGINNING SPANISH II**
Continuation of SPA 111. 3 Cr. (3-0). *Prerequisite: SPA 111.*

# T

## TOOL DESIGN TECHNOLOGY (TDT)

TDT 231
**TOOL DRAFTING (8 weeks)**
Transition between mechanical drafting and tool design; drawings, techniques; purchased parts; standards of shop drawings; material lists; design of cutting tools. 4 Cr. (4-12). *Prerequisite: EDT 112.*

TDT 232
**FIXTURE DESIGN (8 weeks)**
Design of leaf and tumble jigs, plain and index milling fixtures, vise jaws, chuck jaws, lathe fixtures, and adaptor plates. 4 Cr. (4-12).

TDT 241
**GAGE DESIGN AND PROGRAMMING (8 weeks)**
Writing programs for point to point and contouring tape controlled machines; design of plug, snap, ring, flush pin depth, length, and indicating gages. 4 Cr. (4-12). *Prerequisite: EDT 112.*

TDT 242
**DIE DESIGN (8 weeks)**
Designing of cutting, forming, drawing, and cavity dies; simple progressive and compound arrangements. 4 Cr. (4-12).

# W

## WELDING (WEL)

WEL 701
**ACETYLENE WELDING**
Selected units in basic acetylene welding for plumbing students. 2 Cr. (0-5).

WEL 703
**ELECTRIC WELDING**
Selected units in basic electric welding for plumbing students. 2 Cr. (0-6).

WEL 711
**ACETYLENE WELDING**
Theory and practice welding of sheet metal and mild steel plate; oxyacetylene cutting; pipe welding, welding and brazing of ferrous and non-ferrous metals; weld testing; shop safety. 12 Cr. (6-19).

WEL 721
**ELECTRIC WELDING**
Principles and applications for basic electric welding using various types of electrodes for welding of steel plate in all positions, pipe welding; cast iron welding, weld testing. 12 Cr. (6-19)

WEL 831
**INERT GAS WELDING**
Theories and practices of manual inert gas shield technique (TIG) and short arc, high speed, semi-automatic, metallic arc process (MIG). 12 Cr. (6-19).

WEL 841
**WELDING (ADVANCED)**
Practical theory and application of weldments of specifications of AWS, API and ASME codes; all position welding of heavy plate and pipe; testing and weld specimens. 12 Cr. (6-19).

## WOOD PRODUCTS TECHNOLOGY (WPT)
New courses will begin Fall 1981.

WPT 111
**WOOD PROPERTIES AND UTILIZATION**
Physical properties, identification and use of wood, including an understanding of machining and fabrication of major wood products of commercially important species. 3 Cr. (2-3).

WPT 121
**LUMBER AND LOG GRADING**
Separation of hardwood and softwood lumber to grades that are acceptable to wood industry standards. Separation of hardwood and softwood logs to correspond to lumber grade to insure that the quality of lumber sawn will be maximized. 3 Cr. (1-6).

WPT 122
**SAWMILLING I**
Identification and layout of major parts of a sawmill. Maintenance and safe operation of the equipment involved in the sawing of logs into lumber. 3 Cr. (1-6).

WPT 123
**LUMBER DRYING**
The process of drying lumber by natural or artificial methods, including layout of lumber yard, dry kiln operation, and the handling and storage of green lumber. 3 Cr. (2-3).

WPT 231
**WOOD INDUSTRY CO-OP/INTERNSHIP**
Practical experience gained by a planned and supervised program of work with a wood products industry. 3 Cr. (200 Hr.)

WPT 232
**SAWMILLING II**
A continuation of Sawmilling I with emphasis on gaining skill in the sawing of lumber to grade in a safe and economical manner. 3 Cr. (1-6).

WPT 233
**QUALITY CONTROL**
A study of the characteristics of selected sawmill products, air and kiln dry products, veneer and plywood, composition board, furniture and cabinetry, and chemically treated wood products. Includes the methods and equipment used to measure these characteristics and the practical use of quality control data in the wood industry. 3 Cr. (2-3).

WPT 243
**PRODUCTION MANAGEMENT**
Introduces the student to the process of procurement, manufacturing, and marketing of wood products in order to produce a profit. 3 Cr. (2-3).

WPT 244
**EQUIPMENT AND MACHINERY**
A survey of the basic types of machinery used in wood processing and their relationship to the profitable management of a business. 3 Cr. (2-3).

## STUDENT AND CAREER DEVELOPMENT SERVICES

### Orientation

Prospective students at WACC participate in an orientation program designed to provide positive feelings about the College and to introduce them to the college community and its various services and activities. Students are placed in appropriate academic courses and registered for their first semester. This process aids the student in becoming aware of the College community and promotes involvement in various activities.

### Counseling Center

The Counseling Center is available to help students with personal, academic, and career problems.

*Advisors:* Each student is assigned an advisor who will assist in setting up a schedule of courses. The advisor is usually an instructor in the student's program area. Students should discuss academic concerns or problems with their advisor.

*Counselors:* Counselors are available to aid the student in the resolution of many types of problems. Such problems may involve social, emotional, vocational, and personal concerns. The student is the focal point of the process. Any need which is perceived by the student as important will be viewed in the same way by the counselor. Discussion and information shared with a counselor will be held in confidence.

*Ombudsman:* Student concerns which are not resolved through normal college channels can be directed to this office. The Ombudsman will investigate exceptional problems, resolve them if possible, or provide the results of his investigation with recommendations to the President of the College for a decision. This office is located in the Counseling Center.

## Placement

Placement services are designed to aid the prospective graduate who is seeking employment, alumni interested in career and employment information, and students who want to work part-time while attending College. The Placement Office maintains a file of full and part-time job opportunities as well as addresses of prospective employers. Information on full and part-time job openings is also published regularly in The SPOTLIGHT (student newspaper).

The Placement Office schedules on-campus interviews for companies which come to the College to recruit prospective graduates. Companies recruiting on campus include a number of leading industries from across the country. On-campus recruitment usually takes place from September through December and from February through April. Information on these interviews is announced in The SPOTLIGHT and in the New Week News.

Placement seminars are held each semester, just prior to graduation for prospective graduates. During these seminars sample letters of application and resumes are distributed. Students learn how to prepare for job interviews and receive information on employment trends in various parts of the country. During the seminars, students also provide the Placement Office with information for their placement files at the College.

The Placement Office also publishes a graduate placement report each year. The report shows the number of students, by program, who have obtained jobs and the average salaries of graduates one year after graduation. The most recent survey shows (based on an 80 percent return rate) that 89 percent were employed in their field or in a closely related field. Enrolled or prospective students and other interested persons may review this report in the Placement Office, Klump Academic Center, Room 209.

## College Transfer

The Career Development Center will provide assistance to students who need advice in transferring to other educational institutions. We keep a complete file of College catalogs and also have statistics on various programs into which our students have transferred.

## Vocational Diagnostic Program

Making career decisions can be difficult and confusing. The Vocational Diagnostic Program offers individuals a structured method by which they can obtain more information about themselves and their abilities. It includes testing, counseling, and job trials in certain college curriculum areas. For fees and additional information, write or phone:

*Vocational Diagnostic Program*
*Career Development Center*
*The Williamsport Area Community College*
*1005 West Third Street*
*Williamsport, PA 17701*
*(717) 326-3761, ext. 247*

## Tot Watch

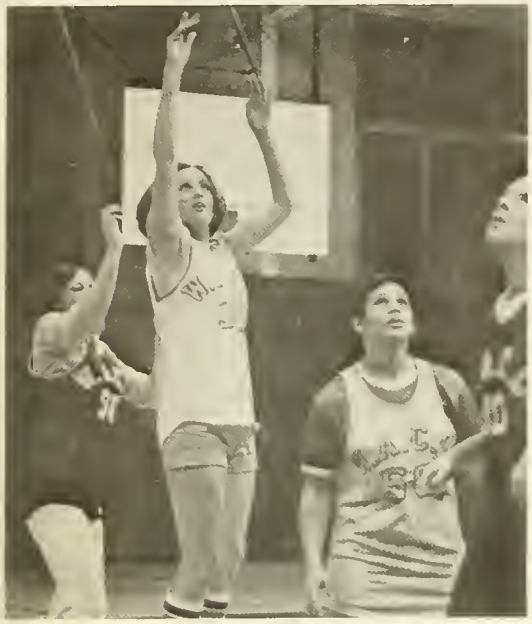
Supervised Tot Watch services are provided on campus from 8:00 a.m. to 4:00 p.m. during the fall and spring semesters. Students with pre-school children age 2½-5 may use these services for a nominal fee. Evening Tot Watch is available from 5:45 to 10:15 p.m., Monday through Thursday during the spring and fall semesters. Students with children age 4-8 may use these services for a nominal fee. For regulations and additional information, write or phone:

*Tot Watch*
*The Williamsport Area Community College*
*1005 West Third Street*
*Williamsport, PA 17701*
*(717) 326-3761, ext. 329*

## Career Development Center

The Career Development Center is presently located in Room 210 of the Klump Academic Center. The Center houses a wide variety of occupational and educational information, including pamphlets, booklets, film strips and other career library resources. Staff members are available to work with individuals as they use these materials and to provide counseling for those who need assistance in career decision making. Other services include programs in resume writing, interview training, and job search strategies. The Career Development Center is open to both students and non-students.

In January 1981, the Career Development Center is scheduled to move into the new Learning Resources Center.



## CAMPUS LIFE

The time you will spend outside the classroom will be an important part of your college life. You are encouraged to participate in the social, cultural, educational, vocational, and recreational activities which augment the instructional program.

### Army Reserve Officers Training Corps (ROTC)

WACC students may enroll in the Army's Reserve Officers' Training Corps (ROTC) Program offered through a cross enrollment provision with Bucknell University. All qualified Freshmen and Sophomore men and women are eligible to enroll, without obligation, in the basic course and can compete for full tuition and fees Army ROTC scholarships.

The advance course—the Junior and Senior years—will be taken at a four year institution after the student transfers. Veterans of enlisted service with any of the Armed Forces may qualify for a special advanced course program leading directly to a commission in the Pennsylvania Army National Guard upon graduation from WACC or a commission on army active duty after completion of undergraduate studies elsewhere.

Successful completion of Army ROTC will be entered upon the student's permanent academic record but WACC will not grant academic credit.

For additional information on the Army ROTC program contact the Student Records Office, Klump, Room 110.

### Athletics

We believe that a well-balanced program of intramural and intercollegiate sports plays an important role in the overall educational program.

At present, the College has basketball (men's and women's), wrestling, cross country, golf, field hockey, and tennis teams that compete on an intercollegiate level.

Intramurals provide an opportunity to participate in active competition to improve physical strength and skill, to pursue leisure time activities, and to develop friendships. The Physical Education staff conducts a variety of intramural athletic leagues for men and women. Activities include basketball, bowling, golf, handball, horseshoes, soccer, softball, table tennis, touch football, track and field, volleyball, wrestling, and others.

### Cheerleading

This activity is under the direction of a faculty member. Announcements of tryouts are made each fall. Cheerleaders are selected on the basis of skill, poise, personality, and enthusiasm.

### College Colors and Nickname

The College colors, gold and burgundy, and the nickname, Wildcats, were selected by popular vote of the students.

## Clubs

New student clubs and organizations are constantly being formed. The following clubs are currently recognized on the WACC campus:

Agribusiness Club
Alpha Omega Fellowship
Alpha Pi Delta (Architectural)
Alumni Association
Artists Unlimited
Chi Gamma Iota (Veterans)
Cinema Club
Circle K
Communications Club
Diesel Power Club
Food & Hospitality Student Management Organization
Forest Technician Association
Gamma Epsilon Tau (Graphic Arts)
Horticulture Technicians Association
Inter-Club Council
Mechanical Engineering Club
Northcentral Pennsylvania Chapter of the Construction Specifications Institute
Outing Club
Phi Beta Lambda (Business)
Rifle and Pistol Club
Ski Club
Sports Car Club
Spotlight Staff
Student American Dental Hygienists Association
Student Government Association
Student Nurses of WACC (SNOW)
Student Society of Manufacturing and Engineering
Theater Company
Varsity Club
Yearbook (Montage) Staff

## Publications

*The SPOTLIGHT* is the official College newspaper published at regular intervals throughout the college year.

*Montage* is the College yearbook which provides a pictorial account of the school year with a focus on the graduating class. Practical experience in writing, photography, and editorial work is available through staff membership.

The *Student Handbook* provides information on student events, regulations, and student services. The Handbook also includes a calendar of student activities.

*New Week News* is a newsletter issued several times weekly which keeps the student body and faculty informed on current issues, announcements, programs, and activities that affect the College.

*WACC After Dark* is a newsletter issued every other week by the Community and Continuing Education Office. The newsletter includes information on courses, programs, and activities for evening students.

## Social/Cultural/Recreational Activities

Students at The Williamsport Area Community College have the opportunity to participate in a wide variety of activities sponsored by various College groups. These include:

—The Student Government Association sponsors dances, Fall and Spring Week Activities, and other social events.

—The Special Events Committee sponsors programs ranging from lectures to the annual Bluegrass Festival.

—The Student Activities Office schedules recreational activities, including skiing, roller and ice skating, tobogganing, and swimming.

—Student clubs and organizations sponsor special activities. For example: the Cinema Club sponsors a weekly movie series, the Theatre Company produces plays and variety shows, the Outing Club sponsors canoeing and camping trips.

## Student Government

The Student Government Association (SGA) is the student governing body of the College. Its purpose is to provide maximum opportunity through a democratic, representative organization for students to promote the interests of the students and of the College. It functions within a constitution originated by the students. All students are members of SGA and are invited to attend meetings.

## ACADEMIC INFORMATION

### Classification of Students

**Full-Time:** A full-time student is one who carries 12 or more credits. Sixteen hours of lecture/demonstration, or 48 hours of shop/lab equal one credit equivalent.

**Part-Time:** A degree or certificate candidate who carries less than 12 credits per semester is enrolled as a part-time student.

**Non-Degree:** A non-degree student is one who does not go through the formal admissions process and therefore is not enrolled in a degree or certificate program. Such a student is permitted to select courses without regard to degree or certificate requirements.

**Special Student:** A rehabilitated or handicapped student who cannot perform some of the requirements in certain shop programs is awarded a special certificate. It is not awarded to a student who may have failed to meet the requirements of a certificate program. PRIOR to entrance to a program, it should be determined whether or not a student will receive a special certificate upon completion of that portion of the program which the student is able to carry. The only exception to this ruling will be the student who becomes handicapped while enrolled in a certificate program.

Students age 18 or older who do not have a high school diploma or the equivalent may also be classified as "special students."

**First Year:** Students who have completed a total of fewer than 24 credits are classified as first year students.

**Second Year:** Students who have completed a total of 24 or more credits are classified as second year students.

**Satisfactory Progress:** As long as a postsecondary student is officially enrolled and officially permitted to continue his/her studies toward a degree or certificate at the College, the student will be considered to be making satisfactory progress. Students receiving financial aid must meet additional criteria as explained in the Financial Aid section of this catalog (page 10) in order to continue to be eligible to receive financial aid.

## Registration

Because the number of students who can register for any class is limited, all students should register for classes as early as possible. The College strongly urges all students to complete their registration, including payment of all fees, by the announced day of Late Registration for each semester. Students registering after this date will be charged a late fee of $10. The College does not guarantee any student the right to register after Late Registration day.

## Credit Load

The academic year is divided into two semesters of approximately sixteen weeks each. The normal full-time load per semester is 12 to 18 credit-hours. Students should allow an average of at least two hours preparation for each credit-hour of course work.

## Credit Overload

With the exception of mandated hours in Practical Nursing and Aviation Maintenance Technician programs, students may not enroll for more than 18 credit hours in Associate Degree or Certificate programs without special permission from the student's Division Director. A student must have earned a 3.0 cumulative average or a 3.0 average the previous semester in order to qualify to take a course overload beyond the normal requirements in either the Associate Degree or the Certificate programs.

## Fees for Students Enrolling for Overload Credits

With the exception of prescribed overloads for Practical Nursing and Aviation Maintenance Technician programs as described in the College catalog, a degree or certificate student enrolled for more than 18 credits will be charged the current student tuition rate per credit for each credit over 18.

## Change of Course

After the official registration period is over, the student may make adjustments in his/her schedule through the process of adding and/or dropping courses.

**Dropping a Course:** A credit course dropped by the student during the first three weeks or the first 20 percent of instruction for the term will not appear on the student's academic record. From the fourth week or after 20 percent of instruction for the term to the end of the tenth week or equivalent for each term, the student may drop a College course with a grade of "W", *unless the student has been withdrawn from the course by the College for absenteeism (in which case the student will receive a grade of "WF").* A student should consult with his/her instructor and advisor prior to making the decision to drop a course. If the course is dropped beyond the tenth week (or equivalent), a grade of "WP" or "WF" will be awarded, depending upon the approval of the respective instructor and the Division Director. No credit will be given for a "WP" grade; however, a "WF" grade affects the student's grade point average in the same manner as an "F". To stop attending a class without officially dropping the course *will cause the student to receive a grade of "WF" or "F".*

**Adding a Course:** A student may add a course only during the first week of classes (two days in Summer Term) by having his/her advisor complete the appropriate portion of a "Student Status Change" form.

The approval of the appropriate Division Director(s) must be obtained before a change can be made.

## Change of Program

Students who want to change from one program of study to another must follow the steps below.

1. Complete an admissions application for WACC transfer and submit it to the Admissions Office.

2. Complete a "Student Status Change Form;" obtain all necessary signatures, i.e., advisor, counseling, division director, and admissions. Submit the form to the Student Records Office.

When a student changes his/her program, all credits earned in the prior program will be evaluated for transfer to the new program. Any course which satisfies current requirements for the new program will appear on the transcript with the earned letter grade. The courses transferred to the new program will be used to compute the cumulative grade point average.

## Repeating a "D" or "F" Course

Students may repeat a course in which they earned a grade of "D" or "F ." However, they must improve the grade of the repeated course to affect their cumulative grade-point average. If the student repeats the course at WACC and improves his/her grade, then both grades will appear on the permanent record card with the higher grade used in calculating the cumulative grade point average. If the student repeats the equivalent course at another institution and transfers the course to WACC (subject to Transfer Policy), the original grade remains on the transcript but is not included in the semester or cumulative average. If the student repeats a course and earns a second "D" or "F", the second grade and credits will not be used in calculating the cumulative grade point average.

## Auditing a Course

Fees for audits will be assessed on the same basis as fees for credit courses. Auditors are not required to prepare lessons or papers or take examinations, nor do they receive credit for the course.

With the consent of the instructor and the Dean for Degree and Certificate Programs, a full-time student may enroll as an auditor in any course that has not exceeded its enrollment quota. A non-degree evening student (one who is not enrolled in a degree or certificate program) needs the permission of the Dean for Community and Continuing Education and the instructor to become an auditor.

Students must inform the Student Records Office that a course is being taken on an audit basis when they schedule.

## Grading System

The college uses the following system of grading (4.00 basis) to indicate the quality of a student's work:

| Grade | | Grade Points |
|---|---|---|
| A | Superior | 4 |
| B | Above Average | 3 |
| C | Average | 2 |
| D | Below Average | 1 |
| F | Failing Work | 0 |
| W | Withdrawn | — |
| WP | Withdrawn Passing | — |
| WF | Withdrawn Failing | 0 |
| I | Incomplete | — |
| AU | Audit | — |
| SP | Satisfactory Progress | — |

If a student is awarded a letter grade of "I", the instructor will submit a letter with the student's grade card stating what the student must do to complete the work and remove the "I". The instructor will also set a deadline, prior to the end of the semester following the awarding of the Incomplete, for the required work to be completed. Copies of the letter will be sent to the student and his/her advisor. A permanent "F" will be recorded if the work is not completed within the prescribed time.

"SP", Satisfactory Progress, is used for certain students in Developmental Studies courses. "SP", Satisfactory Progress, will be awarded if students do not complete all course requirements but do meet the requirements for "SP" as established in the syllabus for a particular developmental course. Students earning an "SP" will re-enroll in the same course during the subsequent semester and, upon mastery of all course objectives, will earn a traditional letter grade.

## Cumulative Grade Point Average

A student's cumulative grade point average is computed by dividing the number of grade points by the total number of credits for which the student has earned a grade of A, B, C, D, F, or WF.

The cumulative grade point average includes: 1) Credit for WACC courses completed by a student currently enrolled in a degree or certificate program; 2) Credit for WACC courses previously completed by a student who re-enrolls in the same program; 3) Credit for WACC courses previously completed by a student who re-enrolls in a different program when such courses are appropriate for the new program; 4) Credit for WACC courses applied to a new program when a student changes his/her program; 5) Credit earned through Cross-Registration with Lycoming College.

The cumulative grade point average does not include:1) Credit granted for CLEP exams; 2) Advanced Placement Credit; 3) U.S. Armed Forces Institute Credit; 4) Service Credit; 5) Credit transferred to WACC from another institution; 6) Credits previously earned by a student who re-enrolls in a new program when such credit does not meet the requirements of the new program; 7) Credits previously earned by a student who transfers to a different WACC program when such credit does not meet the requirements of the new program; 8) Credits for courses in which the student received a "D" or "F" if the student repeats the course and earns a higher grade; 9) Credit for Work/Life Experience.

A decision is currently pending on whether grades will be given for Credit by Exam, and, if so, whether such grades will be included in the student's cumulative grade point average.

## Grade Reports

The College will notify, by mail, all students who are making unsatisfactory progress (D or F) in any course at mid-semester (during the fall and spring semesters). Students who receive such mid-term grades should immediately consult with their instructors and faculty advisor in an effort to improve the quality of their work. Final semester grades will be mailed after the end of the semester or summer session. The grade report will show all course work completed to date by the student. Students should check the cumulative grade report for accuracy and to be certain they are meeting graduation requirements. To protect the confidentiality of the student's record and in compliance with federal law, no grades will be given over the phone.

Since the grade report is also an unofficial copy of their transcript, students may use their grade report when an unofficial transcript is required. For information on obtaining official transcripts, see page 9).

## Withholding Grades

A student's grades and records will not be released if the student has any outstanding loans or fines at the College or if the student has outstanding obligations to the College for the return/replacement of items such as books, tools or equipment. When a hold is placed on a student's grades, the student will be notified in writing of the hold and of the action needed to release his/her grades or records.

## Advanced Placement Credit

Advanced placement at The Williamsport Area Community College is designed to give students who have completed specific competencies prior to entering College the appropriate placement and credit for their accomplishments. The College believes that it has the obligation to place students at the proper educational level to insure success. Students who have completed advanced academic courses in high school, military service, or other education or training institutions and pass appropriate placement examinations will be given advanced placement consideration.

Student application and evaluation of advanced placement credit MUST BE COMPLETED prior to the student completing 12 credits. However, it is recommended that applications requesting advanced placement be submitted by March 15 for students who plan to enroll in the Fall semester, by November 15 for students who plan to enroll in the Spring semester, and by April 15 for students who plan to enroll in the Summer semester.

Students may not receive advanced placement credit for any course in which they received a grade of F, W, WF, or WP. Students currently enrolled in a course must apply for advanced placement prior to the end of the third week of instruction or the equivalent.

WACC recognizes the skills-training of graduates of area vocational technical schools. To verify the degree of skill a student has attained, the College may evaluate previous vocational work or may require that the student take advanced placement exams. Up to a maximum of 30 credits (academic, shop, or lab) may be granted through advanced placement.

New students will receive a schedule of advanced placement test offerings showing the date and times that tests are to be administered. The student should indicate which test(s) he/she wishes to take and return the form to the appropriate Division Office. Other students who qualify to take an advanced placement test (i.e., those who are accepted by the College and have not completed 12 credits) must make arrangements for advanced placement tests directly with the appropriate Division Office.

A copy of the evaluation of the advanced placement test will be sent to the student. Credit earned through advanced placement will be shown on the student's transcript after the student successfully completes one semester at WACC. Advanced placement credit is not used in calculating the student's cumulative grade point average.

## Credit By Exam

Students may apply to take any College course by examination. In order to challenge a course by examination, a student must have completed at least one semester at The Williamsport Area Community College and have earned a grade point average of 2.0. Application to take a course by examination must be made in writing to the appropriate Division Director. Approval must then be given by the instructor(s) of the course involved and the Division Director.

If approval is received, a fee of $25 must be paid at the Bursar's Office prior to each examination. No examination will be prepared or administered until the student presents the $25 receipt. (The $25 fee will be waived for students who complete ENL 111 as a result of their work in ENL 011, Basic English.)

The examination is prepared, administered (at the time set by the Division Director), and evaluated by the instructor(s) of the course. A copy of the result of the examination will be sent to the student. Credit for course(s) completed by examination will be shown on the student's transcript after the student successfully completes one semester at WACC. Up to a maximum of 30 credits may be earned through credit by examination. Credit by exam may not be used to remove a D, F, or WF grade. The examination in a specific subject may be taken only once.

A decision is pending on whether grades will be given for credit by exam and, if given, whether these grades will be used in computing the student's cumulative grade point average.

## Credit for Work and/or Life Experience

The College recognizes that many individuals acquire rich academic and technical experiences through working and/or living in a particular situation. Students who have been accepted for admittance and who feel their work or living experiences warrant consideration for academic credit should apply in writing to the Division Director responsible for the course(s) involved. The application must include evidence and rationale for granting credit.

The Division Director will appoint a committee to assess the candidate's educational and work background. The student will be asked to document his/her work and life experiences and to show that the experiences are equal to a course(s) offered at WACC. The committee will also interview the student. The committee will recommend the number of credits to be awarded.

A copy of the evaluation of work and/or life experience will be sent to the student. Credit earned through work/life experience will be shown on the student's transcript after he/she completes one semester at WACC. Credit for work/life experience will not be used in calculating the student's cumulative grade point average. Up to a maximum of 30 credits may be earned through credit for work and/or life experience.

## Foreign Studies Program

The Williamsport Area Community College, in cooperation with other Pennsylvania and New York colleges, offers a limited number of credit and non-credit foreign living, work, and study programs. These programs are designed to promote international understanding and build bridges of friendship among peoples of the world. For more information on this program contact:

*Dean for Degree and Certificate Programs*
*The Williamsport Area Community College*
*1005 West Third Street*
*Williamsport, PA 17701*
*Phone (717) 326-3761, ext. 264*

## Cooperative Education

Cooperative Education (co-op) is the integration of classroom and laboratory study with planned and supervised periods of relevant and meaningful employment. While on co-op assignment, students work as regular employees of the co-op employer, receive vocational counseling, and earn academic credit for knowledge and/or skills acquired from their work experience. Co-op may be used to replace or supplement required courses within most programs.

The following options are available to students in most programs:

1. Parallel—Students attend WACC on a full-time basis while co-oping on a part-time basis.
2. Alternating—Students alternate periods of full-time study with periods of full-time co-op employment.
3. Extended Day—Students attend college on a part-time basis while working either full or part-time at their regular job.

Variations of the above options are possible, depending upon job and College requirements. Co-op placements range from eight weeks to a full semester or summer of 15-16 weeks.

In order to participate in Cooperative Education, a student must have successfully completed a minimum of one full semester (12 credits) or its equivalent and must maintain a cumulative average of 2.0 or better. (A 2.5 average in courses related to the student's program is recommended.)

### Employer Participation

Employers who can provide full-time or part-time positions which meet the following qualifications are encouraged to participate in the co-op program:

1. The job must provide experience in an area directly related to the student's course of study.
2. The job should provide meaningful and challenging work.

Specific information can be obtained directly from the student's academic division or by contacting:

*Director of Cooperative Education*
*(Degree and Certificate Programs)*
*The Williamsport Area Community College*
*Room 209, Klump Academic Center*
*1005 West Third Street*
*Williamsport, PA 17701*
*Phone (717) 326-3761, ext. 273*

## Lycoming Cross Registration

The Williamsport Area Community College participates in a cross-registration program with Lycoming College. In order to cross register for courses at Lycoming College, a WACC student must obtain the permission of his/her advisor and division director, the Dean for Degree and Certificate Programs and the academic dean at Lycoming College. In order to participate in this program, WACC students must be enrolled on a full-time basis in a degree or certificate program and must not have completed more than 70 credits. Part-time students are not eligible to participate in this program. Students participating in cross-registration will be responsible for paying any special laboratory fees or charges required for the course.

Grades earned through participation in cross-registration will be recorded on the student's WACC transcript. Courses completed with a passing grade ("D" or better) will be credited toward graduation. Grades earned in courses taken at Lycoming College will be included in the student's semester and cumulative average. Students may obtain additional information on cross-registration procedures from their advisors or the Student Records Office.

## Graduation Requirements

All entering students must exhibit competencies in the basic skills (reading, computation, and written expression) necessary for success in their programs. Students who have not demonstrated these competencies on the college placement tests are required to complete specific courses in order to earn a degree or certificate from WACC.

### Associate Degree

The successful completion of a recommended two-year program of study (as listed in this Catalog) at The Williamsport Area Community College leads to an Associate of Applied Science, an Associate of Arts, or an Associate of Applied Arts Degree. To be eligible for an Associate Degree from The Williamsport Area Community College, the student is expected to satisfy the following:

a. Complete a recommended program of study as set forth in this Catalog. Students may substitute courses with prior written permission of the appropriate Division Director and the Dean for Degree and Certificate Programs.
b. Complete a minimum of 30 credits, including the last semester, in courses offered by The Williamsport Area Community College. Credits earned by Advanced Placement, Credit by Examination, or Life Experience may be included in the 30-credit minimum.
c. Earn at least a C average (2.00 cumulative grade-point average) in all courses and complete all required courses with a grade of "D" or better.
d. Satisfy health and physical education requirements as stated in a student's curriculum. A student may receive a waiver from physical education based upon the following considerations:
   1. Age - A student must be 27 years of age or over in order to obtain a waiver.
   2. Military Service - The requirement may be waived if the student was on active duty in the Armed Services of the United States for a minimum of at least one year. (See page 7 for conditions and requirements.)
   3. Physical or Medical Reasons - The requirement may be waived because of physical or medical reasons. (Student must have a statement from a medical doctor stating explicitly the reason for the waiver.)
e. Fulfill all financial obligations to the College.

### Certificates

Certificates will be awarded for the satisfactory completion of a specific program of study as listed in this Catalog. To be eligible for a Certificate from The Williamsport Area Community College, the student is expected to satisfy the following:

a. Complete a recommended program of study as set forth in this Catalog. Students may substitute courses with prior written permission of the appropriate Division Director and the Dean for Degree and Certificate Programs.
b. Complete at least half of the credits required, including the last semester, in courses offered by the College. This includes credit received for Advanced Placement, Credit by Examination, or Life Experience.
c. Earn at least a C average (2.00 cumulative grade-point average) in all courses and complete all required courses with a grade of "D" or better.
d. Fulfill all financial obligations to the College.

### Additional Information

If after completing the final semester, the student lacks some credits required for a degree or certificate, he/she may, with prior approval of the appropriate Division Director and the Dean, be permitted to take up to six semester credit hours from another college to fulfill requirements for a degree or certificate from The Williamsport Area Community College. Only grades of "C" or better are acceptable for such transfer credit.

**Petition to Graduate:** In order to graduate a student must report to the Student Records Office and complete a "Petition for Graduation" form during the first five weeks of classes of the semester in which the student intends to graduate. If this form is not submitted, the student's name will not appear on the Graduation Program. In addition, *the student's final transcript will state that the student is a "non-returning" student,* rather than a graduate.

Students who meet graduation requirements in the summer will graduate at the end of the second summer session.

## The Dean's Honor List

The honor list is announced by the Dean at the completion of each semester. The list will include only those full-time students who have a semester grade-point average of 3.30 or better.

## Withdrawal from College

If a student finds it necessary to withdraw from the College for any reason, the student must:

1. Officially withdraw by reporting to his/her advisor, the Counseling Office, and his/her instructors to obtain and complete the necessary student status change forms and drop/add forms.
2. If the student is also applying for a refund, the "Request for Refund" form must be filled out and submitted with the student status change forms.
3. Satisfactorily account for all property issued by the College.
4. Settle all outstanding College obligations.

Students who do not officially withdraw from the College in the prescribed manner will receive the grade of "F" or "WF" in all courses.

No refunds will be issued unless a student completes the above steps and initiates them within the proper time frame. (See page 10 for dates for withdrawals and refunds.)

The College reserves the right to terminate enrollment of any student or to withhold the degree of any student, if, in the opinion of College authorities, his/her further association is not in the best interests of the student or the College. Specific situations in which the College may terminate a student include, but are not limited to:

1. Failure to meet financial obligations.
2. Failure to meet requirements in a given program and/or course.
3. In certain Allied Health programs, failure to demonstrate safe practices and to complete objectives.

Recommended procedures for appealing questions on academic evaluation are given in the Student Handbook.

## Student Conduct

On admission to The Williamsport Area Community College you accept unqualified commitment to conduct yourself at all times, both on and off the campus, in a responsible manner which conforms with the generally accepted standard of adult behavior. It is expected that you will show courtesy and respect for the administrative officers, faculty, and employees in your personal contacts. You must also understand and accept the necessity for various College regulations and comply with the directives of those authorized to enforce the regulations. If you conduct yourself in a manner contrary to the best interests of the College you will be subject to such penalties as the circumstances justify, including suspension or expulsion. Additional information regarding student conduct on campus and student judicial procedures is available in the Student Handbook.

A student may be suspended or dismissed for improper conduct, failure to comply with College regulations, academic dishonesty, habitual absences, lack of effort and interest, possession of, or being under the influence of, alcoholic beverages or illegal drugs, or under other circumstances as determined by the Board of Trustees.

In all cases where academic dishonesty is established, the student may be dropped from the course with a grade of F. For a second offense, the student may be dismissed from the College. In a case involving a question of academic dishonesty, the professor in whose class the incident is alleged to have occurred will consult with the appropriate Division Director regarding disciplinary action.

## Attendance Policy

1. Regular and prompt attendance at all classes and at scheduled conferences with instructors is expected of all students. All work missed by reason of absence, regardless of the cause, must be made up to the satisfaction of the instructor. Students who know that they will be absent are expected to get assignments from instructors in advance so that the necessary work will be completed before the student leaves, or immediately upon his/her return. This applies to absences for College activity trips as well as absences for other reasons. In all cases of anticipated absence, students should confer with their instructors in advance whenever possible.

2. All faculty are required to record attendance daily.

3. When a student, in the instructor's judgment, is not adequately meeting the course objectives and has missed *more than* the equivalent of the class hours held in one week of instruction, the instructor MAY recommend the student be withdrawn from class by the College.

   If, in the judgment of the instructor, extenuating circumstances are involved (e.g., a death in the family, hospitalization, illness, or serious accident), the following alternatives are available to the student.

   a. To arrange with the instructor's approval a stated plan for meeting course objectives and responsibilities. If completion of the approved plan extends beyond the semester, the student can receive an "I" grade (Incomplete).
   b. Until the end of the tenth week, or equivalent, of each term, the student can withdraw and receive a "W" grade (Withdrawn).

4. Based upon the instructor's recommendation, a decision to withdraw a student from a course MAY be made by the appropriate Division Director. Withdrawal from a course by the College for excessive absences will only be done after the first three weeks of each term or 20 percent of instruction and will be recorded on the student's transcript as a "WF" (Withdrawn Failing).

5. Appeal Process: Students who are withdrawn from a course by the College may appeal the decision within three school days of notification.

   The student may appeal the decision to either the Dean for Degree and Certificate Programs OR the Ad Hoc Academic Policy Group consisting of the Dean for Degree and Certificate Programs, President of the Student Government Association, and Chairperson of the Academic Policy Committee.

## Academic Probation

Any degree or certificate candidate whose cumulative grade-point average is below 2.00 will be placed on academic probation. A student on probation may be required to report to the Counseling Office for special counseling before being allowed to register for classes the following semester. A student may be dropped from the College unless the following cumulative grade-point average is earned:

| End Of: | Cumulative Grade-Point Average |
|---|---|
| First Semester | 1.50 |
| Second Semester | 1.80 |
| Third Semester | 1.90 |

Students are encouraged to seek consultation on academic matters with their advisor or a college counselor.

## Final Examinations

Final examinations may be scheduled by instructors at the end of each semester. A student who is absent from a final examination without good reason is subject to a failing grade.

## COMMUNITY AND CONTINUING EDUCATION

The Office for Community and Continuing Education offers credit and non-credit courses to students whose needs are not met by the College's full-time degree and certificate programs. Courses are held throughout the year and are offered both at the Williamsport campus and at a number of off-campus locations.

Non-credit courses are designed to provide avocational, recreational, and personal enrichment experiences. The majority of the courses are structured for the mature student and recognize the background and motivation that these students possess. Several courses have been developed for younger students and are so identified when these courses are announced. All courses, however, reflect the belief that a student's personal achievement is the best measurement of successful performance. For this reason, no formal grades are given in non-credit courses. All courses are moderately priced and, because of the self-sustaining nature of the program, do not require financial support from the College's sponsoring school districts.

A growing number of credit courses and programs are offered in the evenings throughout the year. These courses can be used to fulfill degree or certificate requirements at the College, or, in many cases, can be transferred to other institutions. (Students wishing to transfer credit should consult with the registrar of the other institution for specific details.) It is also possible to complete an Associate Degree at night in areas such as Accounting, Business Management, Computer Science, Technology Studies, and General Studies. The possibility of offering other programs that can be completed through evening study is currently being investigated.

As a service to evening students, the Community and Continuing Education Office maintains an Evening Tot Watch service. This service is available in Room 101 of the Klump Academic Center during the fall and spring semesters. Evening Tot Watch begins at 5:45 p.m. and ends at 10:15 p.m., Monday through Thursday. Toilet-trained children between the ages of four and eight can be accommodated. The nightly charge to use the service is nominal and there is no registration fee. A snack and a continuing series of innovative activities are offered each evening.

In addition to its credit and non-credit offerings, the Community and Continuing Education Program also includes a number of non-traditional non-credit activities. Special courses have been developed for Senior Citizens and, through the cooperation of Lycoming College, the College has participated in the Elderhostel Program. A summer youth program is being developed and is tentatively scheduled for introduction during the summer of 1981. Canoe, kayak, and backpacking trips are offered as part of the Wilderness Adventure experience. For volunteer firefighters in the College's service area, technical training is available through the Local Level Fire Training Program. Specialized courses and programs have also been developed to meet the specific continuing professional education needs of nursing home administrators. As new educational needs are identified, courses and programs are developed to meet them.

The educational needs of local businesses, industries, governmental units, and social agencies are met through Special Programs. These custom-designed courses and programs are generally offered on-site at times that are convenient for the employee. Technical upgrading, skills development, management training, and resource management are representative of the types of training available through Special Programs.

The primary objective of the Community and Continuing Education Program is to provide high quality, low cost educational opportunities wherever they are needed at times that are convenient. For more information about courses or programs, or to find out how the Community and Continuing Education Program can respond to your specific educational or training needs, please contact the Dean for Community and Continuing Education at (717) 326-3761.

## DEVELOPMENTAL STUDIES PROGRAM

The open admissions policy of The Williamsport Area Community College permits students to enroll in the programs of their choice. However, all entering students must exhibit competencies in the basic skills (reading, computation, and written expression) necessary for success in their programs. Students who have not demonstrated these competencies on the college placement tests are required to complete specific courses in order to earn a degree or certificate from WACC.

The College will award institutional credit for developmental studies courses and the grades earned in those courses will be included in the student's grade point average; five developmental courses—RDG 101, RDG 102, RDG 103, CHD 100, and CHD 101—carry elective credit and may be used to fulfill a general elective requirement. Developmental courses with institutional credit may not replace any course requirement or elective.

The Developmental Studies program is designed to serve a variety of students: those who lack academic skills and requirements for the curriculum of their choice; the "non-traditional" student: unemployed adults, adults returning to school after a number of years of absence, high school dropouts, veterans; those students referred to the program by instructors who recognize a need for one or more of the program's services; those who require assistance and solicit the program services on a "walk-in" basis. The program consists of courses in academic skills, human development, study skills, and career planning.

Students may enter the entire program or part of it as the result of counseling, placement tests, academic record, or personal choice. While in the program, students will take courses in their curriculum. One strength of the program is the frequent contact with staff who assist the student with course selection, problem solving, decision making, career planning.

Classwork is designed to promote a successful teaching-learning atmosphere. Varied learning strategies, individualized and self-paced instruction, small group sessions, tutorial and media support are integrated into the course work.

### College Opportunity Programming (COPing)

This program, funded under the Equal Education Opportunity legislation, Act 101, serves students who are academically and financially disadvantaged. COPing students enroll in Developmental Studies courses; in addition they receive counseling services and tutorial services, participate in cultural and social activities and in a pre-college activity, and are assisted in developing a financial aid package designed to provide them adequate support.

For additional information on either the Developmental Studies Program or College Opportunity Programming, contact:

*Director of Developmental Studies & Act 101*
*The Williamsport Area Community College*
*1005 West Third Street*
*Williamsport, PA 17701*
*(717) 326-3761, Ext. 266*

## COMMENCEMENT AWARDS

Commencement awards give public recognition of achievement in various areas accompanied by cash awards in varying amounts.

ANCHOR/DARLING VALVE AWARD for scholastic achievement in a certificate program in applied arts and sciences.

AVCO AWARD for scholastic achievement in humanities and social sciences.

LEWIS H. BARDO MEMORIAL AWARD to a student who exemplifies the ideals of Lewis H. Bardo (devotion to duty, helpfulness to others, friendliness, high ideals).

DALE RUSS BERG AWARD for proficiency in the operation and use of heavy equipment.

ELLEN HARDING BERRY NURSING AWARD presented to the student who has displayed outstanding scholastic achievement and exceptional ability in practicum and communication skills.

CENTRAL PENNSYLVANIA CHAPTER OF CHARTERED LIFE UNDERWRITERS' AWARD to an outstanding student in the two year associate degree program in the Business and Computer Science Division who shows promise in the insurance field.

THE DR. EUGENE CHIANELLI AWARD to the student who displays the most proficiency in preventive dentistry.

THE DR. EUGENE CHIANELLI AWARD to the graduate student who has overcome the greatest obstacles or hardship in completing his/her education in the School of Dental Hygiene.

CLINTON ELECTRIC SUPPLY COMPANY, INCORPORATED, AWARD for outstanding electrical student.

COMMONWEALTH BANK & TRUST COMPANY DATA PROCESSING DEPARTMENT AWARDS to two outstanding students in the Computer Science Program, one for the two-year Associate Computer Science Degree and one for the one-year Certificate Computer Operator Course, based on the following criteria: scholastic attainment, leadership ability, and contribution to data processing education at WACC.

THE COMPUTER SCIENCE FACULTY AWARDS to two outstanding students in the Computer Science Program who have excelled in the program and who have exhibited those qualities of leadership, friendship, cooperation, and dedication that will make him/her a valuable addition to the profession. One award will be given to a two-year Computer Science Degree student and one to a one-year Computer Operator Certificate student.

DEANS' AWARD for scholastic achievement and service to the College.

DENTAL HYGIENE FACULTY AWARD given to the student who has demonstrated the highest professional attitude.

DENTAL HYGIENE FACULTY AWARD to the student who demonstrated extraordinary enthusiasm and commitment to the dental hygiene profession.

ELIZABETH R. DOWNS AWARD for secretarial proficiency.

GLENN E. DUNLAP SCHOLARSHIP AWARDS to students selected by faculty of the Building Technologies Division, based on high scholarship standing, better than average skills, dependability and competence, and on capabilities of leadership as exemplified by Glenn E. Dunlap.

FORKLIFTS, INCORPORATED, AWARD given to a graduating cooperative education student in the Service and Operation of Heavy Construction Equipment Program who has demonstrated superior competencies in the service area.

GAMMA EPSILON TAU FRATERNITY AWARD to the student in the Graphic Arts Program who exhibits outstanding development in skill, capability and leadership, and a willingness to help others.

HOFF SUPPLY COMPANY AWARD, in memory of the late Samuel H. Hoff, for his understanding and appreciation of the need for plumbing and heating tradespeople to be able to use mathematics effectively and accurately in the application of their craft, to the graduating student in plumbing and heating who excelled in related mathematics and attended college under exceptional conditions.

THE DR. CLARKE J. HOLLISTER MEMORIAL AWARD to the graduating student of Dental Hygiene who has displayed outstanding interest and accomplishment in the area of patient education.

THE RICHARD M. KNAUR AWARD for a student who shows excellence in the field of business and technology and is planning on pursuing this field as his/her life work.

LYCOMING RADIOLOGY ASSOCIATES, LTD. AWARD for the student who most nearly exemplifies the ideals of selflessness, unusual devotion to duty, sensitivity to the patient's comfort and needs, and service to colleagues, patients and the hospital beyond the ordinary.

THE EWING W. MUESELER AWARD for the student showing the highest degree of proficiency in the Diesel Program.

THE NORTHERN CENTRAL BANK ANNUAL AWARD to a graduating student in the two-year Computer Science Associate Degree curriculum based on the following criteria: the student (1) must plan to enter the data processing field, (2) must have demonstrated excellence in programming and other data processing curriculum, (3) must have maintained an above average total scholastic achievement, and (4) must have demonstrated a high degree of leadership ability.

PENNSYLVANIA INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS' AWARD for excellence in accounting studies under criteria set forth by the Pennsylvania Institute of Certified Public Accountants in the Business and Computer Science Division.

PENN-YORK LUMBERMEN'S AWARD for outstanding citizenship and interest in management and wise use of forest resources.

PHI BETA LAMBDA FRATERNITY AWARD for performance and dedication to the fraternity.

PRESIDENT'S AWARD for leadership and service to the college community.

PULLMAN POWER PRODUCTS AWARD for scholastic achievement in an associate degree program in applied arts and sciences, Engineering and Design Technologies Division.

RAUB SUPPLY COMPANY AWARD to the most outstanding student in the electrical construction curriculum.

RAUB SUPPLY COMPANY AWARD to the graduating plumbing and heating student with academic excellence and exceptional ability to perform trade related skills.

HELEN A. SMITH AWARD presented to the nursing student who has shown extraordinary achievement in theory, practicum and personal growth.

CHAPTER 49 OF THE SOCIETY OF MANUFACTURING ENGINEERS (SME) AWARD a certificate of merit to the SME student-member who has contributed most to the advancement of manufacturing education.

ROSE STAIMAN MEMORIAL AWARD to the student who fulfills the following requirements of brotherhood, service to college and community, and scholastic achievement.

WILLIAM J. STITZEL MEMORIAL AWARD for the graduate from the heavy construction equipment department who best exemplifies William J. Stitzel's dedication and service to the College and the student body.

ROBERT G. THOMAS AWARD for the graduating student who has attained the highest cumulative average in welding.

TRUSTEES' AWARD to a female student for achievement under exceptional conditions.

TRUSTEES' AWARD to a male student for achievement under exceptional conditions.

U. A. LOCAL NO. 810 PLUMBERS AND STEAM FITTERS AWARD to a graduating student in plumbing and heating, residing in the Local No. 810 membership area, who has shown a strong interest and desire to become a member of the Plumbers and Steam Fitters Local No. 810.

WALL STREET JOURNAL STUDENT ACHIEVEMENT AWARD to that graduating student demonstrating superior achievement in business administration.

THE WEST BRANCH DATA PROCESSING AWARD to an outstanding student in the computer science field.

THE WEST BRANCH RADIOLOGICAL ASSOCIATES AWARD to an outstanding graduate student of the Radiologic Technology Associate Degree program who has demonstrated high scholastic achievement, competence in and dedication to the profession, and a caring attitude toward all people.

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## COLLEGE ADMINISTRATIVE STAFF AND NON-TEACHING PROFESSIONAL STAFF

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DR. WILLIAM HOMISAK/Assistant to the President (Associate Professor)

DR. ROBERT G. BOWERS/Administrator for Legal and Labor Matters/ Director, Math, Science and Allied Health Division (Professor)

DR. GRANT M. BERRY, JR./Director of Resource Development

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JAMES C. McMAHON/Administrative Assistant to Dean for Administrative Services

ROBERT EDLER/Bookstore Manager

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WILLIAM C. ALLEN/Director of Business and Financial Operations

E.H. DEWALT, JR./Chief Accountant

DEBORAH RUPERT/Accountant

JANICE ODELL/Purchasing Agent

HARRY TUPPER/Supervisor, Warehouse

GEORGE MOSTELLER/Coordinator of Inventory and Surplus Property Procurement

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WILLIAM T. WARD/Director of Computer Services (Assistant Professor)

CHARLES H. WHITFORD/Application Programmer

**Personnel**

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**Physical Plant**

RAYMOND C. LOWE/Director of Physical Plant

JOHN ROBINSON/Assistant to the Director of Physical Plant

HARRY BAILEY/Superintendent of Maintenance

ROBERT LINN/Supervisor of Custodial Services

LAWRENCE SMEAK/Chief Security Officer

**Student Records**

KATHRYN MARCELLO/Director of Student Records

### DEGREE AND CERTIFICATE PROGRAMS

DR. EDMOND A. WATTERS III/Dean for Degree and Certificate Programs

DR. LUENE H. CORWIN/Assistant Dean for Degree and Certificate Programs (Assistant Professor)

RONALD McMAHON/Instructional Development Specialist

**Cooperative Education**

WILLIAM BRADSHAW/Director, Cooperative Education (Assistant Professor)

**Learning Resources Center**

DAVID P. SIEMSEN/Director of Learning Resources Center (Assistant Professor)

A. NEALE WINNER/Coordinator, Media Production and Instructional Technology

LAURA HAAS/Librarian (Assistant Professor)

ANDREW E. SPULER/Librarian (Assistant Professor)

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JOSEPH G. SICK/Director, Earth Science Division (Professor)

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LAWRENCE W. EMERY, JR./Acting Dean for Student and Career Development/Director, Counseling and Career Development

NANCY ELIAS/Nurse, Dispensary

MARY BARDO/Tot Watch Supervisor

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CHESTER D. SCHUMAN/Director of Admissions

PATRICIA STALGAITIS/Assistant Director of Admissions

JILL LUKE/Housing Coordinator

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KATHRYN FERRENCE/Coordinator, Adult Career and Education Services (ACES)

JULIE GROGAN/Career Development Specialist

DAVID HENDERSON/Program Aide, Youth Employment Training Program

MARTIN McCORMICK/Career Development Specialist

THOMAS M. McNALLY/Counselor/Student Ombudsman (Professor)

KATHI REED/Program Aide, Youth Employment Training Program

JOYCE SELVOCKI/Program Aide, Youth Employment Training Program

THOMAS C. SHOFF/Counselor

**Developmental Studies and COPing (Act 101)**

DEAN FOSTER/Director of Developmental Studies and Act 101

JAMES BRYAN/Counselor, Developmental Studies and Act 101

DIANA FRANTZ/Professional Tutor, Math/English Lab

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JENNIE TAYLOR/Director of Financial Aid

JANICE KUZIO/Financial Aid Assistant

DONALD SHADE/Financial Aid Assistant

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## FACULTY

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SCOTT APPLEMAN/Instructor, Service and Operation of Heavy Construction Equipment

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LAMONT BUTTERS/Assistant Professor, Civil Technology

ANTHONY CILLO/Instructor, Journalism

DAVID B. CLARK/Assistant Professor, Chemistry (Sabbatical Spring 1981)

NED S. COATES/Assistant Professor, English (Leave Fall 1980 and Spring 1981)

PATRICIA CONN/Assistant Professor, Business Administration

LLOYD C. COTNER/Assistant Professor, Architecture

ROBERT G. CRISSMAN/Instructor, Building Construction

WILLIAM E. CURRY/Instructor, Automotive

ROBERT W. DANNELLEY/Instructor, Electrical Construction

ROGER E. DAVIS/Assistant Professor, Mathematics

MICHAEL T. DECKMAN/Assistant Professor, Automotive

DAVID DIETRICK/Instructor, Welding

JAMES DOEBLER/Instructor, Aviation

FRED W. DOCHTER/Assistant Professor, Carpentry

DR. DANIEL J. DOYLE/Professor, Government and History

SAMUEL E. DRIVER/Instructor, Automotive

DR. PETER DUMANIS/Professor, English

WILLIAM H. EALER/Assistant Professor, Architectural Drafting

CARYLL A. ECK/Associate Professor, Practical Nursing

BENJAMIN H. ELDRED/Instructor, Service and Operation of Heavy Construction Equipment

JACQUELYNNE ELLIS/Instructor, Practical Nursing

DAN C. EMICK/Instructor, Service and Operation of Heavy Construction Equipment

WAYNE E. ETTINGER/Instructor, Horticulture

DENNIS E. FINK/Instructor, Horticulture

DONALD M. FLYNN/Associate Professor, Automotive

JAMES FOX/Instructor, Welding

JAMES GARLAND/Instructor, Aviation

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VIVIAN MOON/Associate Professor, Food Service and Hospitality

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VERONICA MUZIC/Associate Professor, English

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DAVIE JANE NESTARICK/Instructor, Dental Hygiene

MICHAEL NESTARICK/Associate Professor, Mathematics

HAROLD L. NEWTON/Instructor, Graphic Arts

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RUTH NICE/Instructor, Practical Nursing

ROBERT L. NORTON/Instructor, Aviation

ELWOOD PAULING/Instructor, Machine Shop

RODMAN H. PERRY/Instructor, Automotive

RAMON H. PICKERING/Instructor, Automotive

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FRANK L. PORTER/Associate Professor, English

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LEE ROUSH/Instructor, Automotive

WILLIAM G. RUMMINGS/Instructor, Building Construction

RICHARD SAHN/Instructor, Sociology and Psychology

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FREDERICK B. SHARAR/Assistant Professor, Foreign Languages

JAMES SHAW/Instructor, Physics

PATRICIA SHOFF/Assistant Professor, Business Administration

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GLENN R. SPOERKE/Assistant Professor, Forestry

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BONNIE R. TAYLOR/Assistant Professor, Business Administration

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RONALD E. THOMPSON/Professor, Biology

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MICHAEL TYSON/Assistant Professor, Mathematics

RITA C. ULRICH/Assistant Professor, Business Administration

ROBERT S. ULRICH/Assistant Professor, English

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ROBERT VAUGHN/Instructor, Welding

RICHARD WEILMINSTER/Assistant Professor, Horticulture

JACKIE E. WELLIVER/Instructor, Drafting

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THOMAS M. WINDER/Assistant Professor, Computer Science

HAROLD D. WINNER/Instructor, Building Construction

GEORGE P. WOLFE/Associate Professor, Computer Science

LLOYD F. WOODLING/Assistant Professor, Mathematics

WILLIAM P. YOUNG, SR./Instructor, Building Construction

WILLIAM P. YOUNG, JR./Instructor, Computer Science

PAUL ZELL, JR./Instructor, Service and Operation of Heavy Construction Equipment

PAUL J. ZELL, SR./Instructor, Plumbing

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MARSHALL R. LAIRD/Manager, West Branch Manufacturers' Association
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RITA F. KELLY/Computer Programmer, Bro-Dart, Inc.
TERRY REYNOLDS/Financial Analyst, The Harwood Company, Inc.
JUAN ROJAS/Computer Programmer, Eastman Kodak (former student)
ROBERT WALP/Wepco, Inc.—W.E. Paulsen Co.
LINDA WHALEY/Secretary, Pullman Power Products (former student)
ALLEN WOLESLAGLE/Branch Manager, Forklifts, Inc.

### COPING PROGRAM (ACT 101)

DONALD BENNETT/Local Office Manager, Bureau of Employment Security
GEORGIA BROWN/Sylvania
EDWARD CLAUDIUS/Guidance Counselor, Montoursville High School
SAMUEL WASHINGTON/Counselor, Williamsport Area School District
WARREN WATSON/Director, Bethune-Douglass Community Center
MICHAEL WILT/Manpower Administrator, CETA

### COUNSELING & CAREER DEVELOPMENT CENTER

DAPHNE ANDERSON
DONALD BENNETT/Manager, Bureau of Employment Security
DR. GEORGE DESAU/Psychologist
MARY JANE EVENDEN
WAYNE FAUSNAUGHT/Supervisor of Guidance & Counseling, Williamsport Area School District
DAVID FRANKLIN/STEP
WILLIAM RUPP/Lycoming College
GLORIA SACKMAN-REED
JANET TRICE/STEP
RHONA WILK/Hope Enterprises Rehabilitation Workshop

## BUILDING TECHNOLOGY

### Building Construction Technology & Construction Carpentry

CHARLES D. FIANTACA/1979 President of Susquehanna West Branch Home Builders; CDF Home Improvements
DAVID N. HINAMAN/Business Representative, Local #691, Carpenters Union
ROBERT C. JESSELL/Vice President, Lundy Briggs Company, Inc.; Director of National Home Builders Assoc.
MELVIN R. LLOYD/Masonry Contractor
FRANCIS B. LORSON/Partner, Lorson and Lorson Building Contractors
CHARLES A. SHIPTON/President, C.A. Shipton, Inc., Building Contractor
CARL E. SNYDER/Secretary, G.C. Corporation
ROBERT WOOLCOCK/PP&L

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PAUL DAMASCA/Plumbing Masters
NEAL DIBBLE/Dibble Plumbing Services
JOHN F. ENGEL/Business Manager of Local #810, Plumbers & Steamfitters Union
SAMUEL R. HOFF/President and Treasurer, Hoff Supply Company
MICHAEL STEINBACHER/Service Manager, Montour Auto Service

## BUSINESS AND COMPUTER SCIENCE

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DONALD G. HOLTZMAN/General Manager, Stone Container Corporation
EILEEN A. MURPHY/Employment Representative, Bell of Pennsylvania
DR. EMORY RARIG/Dean, Division of Business, Bloomsburg State College
JUDY REITMEYER/Clerk-Steno II, Division of Foreign Languages, Philosophy, Anthropology & International Education, Bloomsburg State College
MARVIN STAIMAN/President, Staiman Brothers
FRANCIS J. TRIPOLI/Vice-President and Controller, Williamsport Hospital
JOHN TROISI/Troisi Men's Wear

### Computer Science

RONALD BOYCE/Assistant Manager of Data Processing, Commonwealth Bank & Trust
JOE EMERY/Director of Administration, Sprout-Waldron, Koppers, Inc.
JAMES J. GORE/Data Processing Manager, Lycoming Division Avco
WILLIAM MILLER/Manager of Computer Operations, Williamsport National Bank
BLAINE E. MOYER/Senior Vice President of Operations Division, Northern Central Bank and Trust
DONALD T. ROUSCHE/Data Processing Manager, Stroehmann Brothers Company
RICHARD WEIGEL/Supervisor of Management Information Services, GTE Sylvania, Photoflash Plant

## COMMUNICATIONS, HUMANITIES, SOCIAL SCIENCES

### Broadcasting

GALEN CASTLEBURY/Manager, WMPT, South Williamsport
MARY JACOBSON/Announcer, WRAK
JERRY LAKE/Night Time Announcer, WWPA, Williamsport
HARRIS LIPEZ/Manager, WBPZ, Lock Haven
W. WILLIAM OTT/Manager, WWPA, Williamsport
PAUL ROTHFUSS/Manager, WLYC, Williamsport
SUE SCHRECK/ Continuity Director, WRAK, Williamsport
LORI SHANNON/News Director, WLYC, Williamsport
CAREY SIMPSON/Manager, WTRN, Tyrone
LARRY SOUDER/Manager, WPGM, Danville

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MAX L. COLEGROVE/Owner and Publisher, Penny Saver, Wellsboro and Advertiser, Mansfield
ALVIN N. ELMER/National News Editor, Grit, Williamsport
REBECCA F. GROSS/Editor Emeritus, The Lock Haven Express, Lock Haven
CLIFFORD A. THOMAS/Editor, Sun-Gazette, Williamsport

## EARTH SCIENCE

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JAMES GOTTSCHALL/Manager, Agway
PATRICIA HALLOWELL/Farm Operator
GORDON HILLER/Field Representative, DER
ROBERT REICH/General Manager, Farm Credit Service
GEORGE ROBINSON/Owner-Operator Feed Store
DR. GLENN STEVENS/Retired Professor
DAVID THOMPSON/Assistant Manager, Agway
FRANK WHITE/Farm Operator
THELMA WHITE/Farm Operator
WILLIAM WILLIAMS/Vice-President, Jersey Shore State Bank
ALLAN WOODWARD/Vice-President, Fidelity National Bank of Pennsylvania

### Forest Technology

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DONALD BENSON/Salesman, Cotton Hanlon Company
WILLIAM BROOKS/Pulpwood Producer
DONALD CROFT/Forester, Pennsylvania Game Commission
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NELSON FOLSOM/Manager, Wood Procurement, Proctor & Gamble Paper Products Co.

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LEONARD KUHN/Co-Owner, Kuhn Brothers Lumber Company
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MELVIN LEWIS/Owner, Lewis Sawmill
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R.G. MALLORY/President, Mallory Lumber Company
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WALTER PEECHATKA/Executive Secretary, Commonwealth of Pennsylvania, Department of Environmental Resources, Bureau of Soil and Water Conservation
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RICHARD C. RODENBACH/Area Manager, Wood Procurement, Proctor & Gamble Paper Products Co.
A.E. STAMER/Wood Procurement, Masonite Corporation
EDWARD SWISHER/Wood Procurement Manager, Hammermill Paper Company
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MICHAEL YEAGLE/Buyer, Maple Grove Mills

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KENNETH BRYFOGLE/President, Bryfogle's, Inc.
DENNIS BURD/Owner, Country Market Landscape Garden Center
S. HOWARD DAVIS/Executive Director, Pennsylvania Nurseryman's Association
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CHRISTINE FINK/Designer
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WILLIAM HOLMES/Co-Owner, Nevill's Flowers and Greenhouses
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BRIAN McCARTHY/Owner, Gene Smith Florist
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BARRY PLOWMAN/Garden Center Manager, Shiloh Nurseries, Inc.
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KENNETH REESE/Educator
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ARNOLD B. WAGNER/Executive Secretary, Pennsylvania Flower Growers
ALLAN WALTER/Owner-Operator, Whispering Pines Greenhouse
DONALD WERT/Owner-Manager, Wert Landscape Design
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**Service and Operation of Heavy Equipment**

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BONNIE INGRAM/Soil Technician, SCS
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ROBERT WEBB/Sales Representative, Highway Equipment & Supply Company
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MAX BINGAMAN/Bingaman & Sons
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ROBERT HERZ/Eastern Wood Products
DAVID HUNTER/Lumber Buyer, General Interiors
LEONARD KUHNS/Kuhns Brothers Lumber Company
MELVIN LEWIS/Sawmill Owner, Dwight Lewis Lumber Co., Inc.
JIM R. MATSON/Matson Lumber Company
JAY McCALL
EUGENE M. MERLOE/American Lumber
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GERALD SCHANBACHER

## ELECTRIC/ELECTRONICS

**Electrical Construction**

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HARRY FISLER/Manager Conservation Services, Pennsylvania Power and Light
GUY KOSER/Koser Electric Co., Inc.
MICHAEL LECCE/Lecce Electric Company
QUENTIN NOVINGER/Pennsylvania Power and Light
CARL SMOLLINGER/Bethlehem Steel Company

### Electrical Technology

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CHERYL DESMOND/Honeywell, Inc.
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CHRIS HALL/Alcan Cable
JOHN HOUGH/Retired Professor, The Williamsport Area Community College
KIM KONYAR/Bethlehem Steel
ANGELO MARTINOZZI/Avco Corporation, Lycoming Division
CARLETON POLK/GTE Sylvania, Inc.
JOHN SHAFFER/Avco Corporation, Lycoming Division
JOHN TYLER/GTE Sylvania, Inc.

### Electronics Technology

LEO BURIES/GTE Sylvania, Inc.
CARL CRAGER/GTE Sylvania, Inc.
JAMES HAMILTON/IBM
DONALD HILL/Divine Providence Hospital
VINCE LARKA/GTE Sylvania, Inc.
WILLIAM MATTOX/Bailey Meter Company
JACK MROCK/GTE Sylvania, Inc.
RICHARD PASCO/Litton Industries
EDWARD VIBERT/GTE Sylvania, Inc.

## ENGINEERING AND DESIGN TECHNOLOGIES

### Advertising Art

MAX AMEIGH/Professor of Art
ROBERT CRAIN/Art Director, Westvaco Corporation
FREDERICK T. GILMOUR III/Multi-Media Specialist, Williamsport Area School District
BERTON HEINRICH, JR./Art Director, Sprout-Waldron Koppers, Inc.
LARUE JOLIN/Advertising Manager, Britts Department Store
GENE L. SORTMAN/Design and Product Manager, Westvaco Corporation
HARRY WISNER/Art Director, Grit Publishing Company

### Architectural Technology

DR. JUNE BASKIN/Director of Art, Williamsport Area School District
THOMAS B. BROWN/Assistant Professor, Architectural Engineering, Pennsylvania State University
NICHOLAS CATINO/George H. Roller Company, Inc. (WACC graduate)
M. ROBERT DESMARAIS/Associate Professor, Architecture, Pennsylvania State University
JOHN E. HOFFMAN/Architect
ALBERT LANDIS/Architectural Technician (WACC graduate)
EARL MOWREY/Contractor (WACC graduate)

### Civil Technology

WARREN E. COLE/President, Lycoming Construction Company
ROBERT FERRELL/Civil Engineer
CLIFTON A. FRY, JR./U.S. Geological Survey, Map Requirement Branch
PAUL SOLOMAN/Soils Engineer, PA Dept. of Transportation
JERRY WALLS/Planner, Lycoming County
DONALD WILBUR/Chief Photogrammetry & Surveys, PA Dept. of Transportation

### Drafting Technologies

JAY DAWES/Chief Draftsman, Anchor Darling Valve Co.
ROBERT HAUGH/Drafting Coordinator, Sprout-Waldron, Koppers, Inc.
HORACE HERLOCHER/Operator, Interaction Graphics, Anchor Darling Valve Co.
RONALD MOSER/Alcan Cable Co.
DAVID SHEASLEY/Technician, Sprout-Waldron, Koppers, Inc.
WILLIAM WELCH/Hammermill Paper Company
WILLIAM WOLFE/Piper Aircraft

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NICHOLAS DEMKO/Prep Department, Reed Hann Litho
DICKSON DYER/Salesman, Penn Graphics Supply Company, Inc.
JAMES MILLER/Manager, Printing Department, Piper Aircraft
JAMES MUTCHLER/Instructor, SUN AVTS
MICHAEL THALER/Foreman, Data Papers, Inc.
JAMES WITHERS/Department Chairman, Williamsport Area School District

### Machine Shop

KENNETH HEINLEN/Toolroom Foreman, LEMCO
RODNEY HUSTED/Industrial Engineer, Anchor Darling Valve Company
RAYMOND MARSHALEK/President, Fairfield Manufacturing
CON OHMNEIS/President, SEDCO
HILLERY SCHMOUDER/Toolroom Staff Supervisor, GTE Sylvania, Inc.

### Sign Painting

WILLIAM BEST
ERNEST LUNDY (WACC graduate)
SUSAN MAGARGLE (WACC graduate)
GEORGE WRIGHT/Wright Sign Company

### Welding

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CLYDE CONFAIR/Expert Sales and Service
LYNN CRIST/Pullman Power Products, Division of Pullman, Inc.
DONALD FOLMAR/Folmar Welding
WILLIAM RUPRECHT/A.C. & F. Industries
OWEN SMITH
WILLIAM YOST/A.C. & F. Industries

## MATHEMATICS, SCIENCE, ALLIED HEALTH

### Dental Hygiene

DR. EUGENE W. CHIANELLI/Private Practice
DR. MORRIS JACOBSON/Private Practice
DR. EDWARD M. KNIGHTS/Private Practice
SANDRA NOLAN/District Dental Hygienist, PennDOT
PAMELA PARKS, R.D.H./Office of A. David Parks
DR. DANIEL WURSTER/Private Practice
DR. MENDAL VANVALIN/Private Practice

### Food & Hospitality Management and Dietetic Technician

JOAN R. ALKIRE/Chief Dietitian, Williamsport Hospital
HARVEY BOATMAN/Wholesaler, Rinella Produce Co.
DEBORA CROFT BROUSE/Dietitian, Selinsgrove State Hospital (WACC graduate)
HAROLD BROWN/Food Service Supervisor, Geriatrics and Medical Centers, Inc., Care Pavilion of Walnut Park, Philadelphia (WACC graduate)
MAURICE FULLER/Owner, Ho-Hum Sizzler Steak House, Regis Limited Incorporated
MICHAEL GOODREAU/Manager, Penn-Wells Hotel
BILL HASSON/Owner, Manager, City View Motel
SISTER VINCENT HUBER/Dietitian, Divine Providence Hospital
KATHY MAHOSKY/Dietitian, Williamsport Hospital
JAN McLAUGHLIN, R.D./Cafeteria Director, Williamsport Area School District
DIANE ROTH/Dietetic Technician, Quakertown Childrens Hospital (WACC graduate)
DAVE SMITH/Night Manager, Country Cupboard (WACC graduate)
TRUDY WELSHANS/Manager, Hotel Mohawk

### Operating Room Technician/Surgical Technician

NANCY BERGENSEN, R.N./Director, Nursing Service, Divine Providence Hospital
SISTER M. EMILENE, R.N./Administrator, Divine Providence Hospital
DR. WILLIAM H. GEHRON, JR.
PATRICIA SOLLEY/O.R. Supervisor, Divine Providence Hospital
DR. WILLIAM D. TODHUNTER

### Practical Nursing

NANCY BERGESEN, R.N./Director of Nursing Service, Divine Providence Hospital
SISTER M. EMILENE, R.N./Administrator, Divine Providence Hospital
DORIS FAIRCHILDS, R.N./Director of Nursing Service, Muncy Valley Hospital
MARY FENTON, R.N./Administrator, Leader Nursing Home, Jersey Shore
ALLEN FREY/Administrator, Muncy Valley Hospital
DORIS HEIM, R.N./Director of Nursing Service, Lysock View Home and Hospital
JANICE HOFER, L.P.N.
JOANNE KREZMER, R.N./Assistant Administrator, Lysock View Home and Hospital
RICHARD LEHR, L.P.N.
FRANCES NARDI, R.N./President, Williamsport Hospital Alumni Association
DR. RUDOLPH PATRIZIO/Medical Director, Lysock View Home and Hospital
ANDREW SPAETH/Administrator, Lock Haven Hospital
MICHALINE SWANKOSKI, R.N./Director of Nursing Service, Lock Haven Hospital
GLADYS UPDEGROVE, R.N./Associate Director of Quality Assurance in Nursing, Williamsport Hospital
CLIVE WAXMAN/President, Williamsport Hospital
WAYNE YEARICK/Administrator, Jersey Shore Hospital

### Radiologic Technology

ROBERT ALBAN/Technologist, Divine Providence Hospital
SISTER AUGUSTA/Technologist, Divine Providence Hospital
DR. ROBERT BECKLEY/Radiologist, Lock Haven Hospital
FRANK ELLIS/Technologist, Williamsport Hospital
DR. HARMON MACHANIC/Radiologist, Divine Providence Hospital
DR. GORDON SHAW/Radiologist, Williamsport Hospital

## TRANSPORTATION TECHNOLOGIES

### Auto Body

RON BUDMAN/Owner, Budman's
RALPH HEATER/Owner-Operator, Ralph Heater Auto Body
DANIEL PLANKENHORN/Owner-Operator, Allied Auto
EDWON STROBLE, JR./Owner-Operator, Stroble's Garage
STEVEN WHIPPLE/Owner-Operator, Whipple's Auto Body

### Auto Mechanics

ARTHUR BARR/Owner, Barr Motors, Inc.
CECIL CALVERT
WILLIAM FRICK/Mechanic, Shirn's Pontiac GMC
DICK GIPE/Service Manager, Hackenburg Chevrolet
JOHN GUISWITE
GENE YORKS/Service Manager, Van Campen Dodge

### Auto Technology

CHARLES CODER/Dept. Mech. Eng., Bucknell University
GERALD ESHBACH/Service Manager, Larry Herron, Inc.
GARRY L. FOLTZ/Service Manager, Koerner Ford
ROBERT INGRAM/Engineer, Avco Corporation, Lycoming Division
DONALD KING/Owner-Operator, K & W Transmissions
LARRY STROUSE/Zone Representative, Sun Electronics

### Aviation

ROBERT BARRETT/Foreman, Avco Service Center, Lycoming Division
THOMAS CRIPE/Chief Maintenance Inspector, Federal Aviation Administration
KARL CRIST/Mechanic, Avco Service Center
ROBERT GIFT/Co-owner, Lock Haven Airmotive Co.
CLYDE SMITH, JR./Service Inspector, Piper Aircraft

### Diesel Mechanics

GEORGE FREDRICKS/Vice-President, General Manager, Diesel Service Inc.
STANLEY KABATA/Shop Foreman, Pennsylvania Power and Light
C.D. KELLER/Co-Owner, Operator, Keller & Schell
JOHN KELLY/Owner-Operator, Hunter & Lomison, Inc.
THOMAS NEYFELDT/Branch Manager, Penske Detroit Diesel Allison
GEORGE TANNER/Branch Motor Express
WILLIAM THOMKE/General Manager, Nau & Thompson

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## 1980

## FALL SEMESTER

### August

| | | |
|---|---|---|
| Mon. | 18 | Convocation<br>Late Registration |
| Wed. | 20 | Orientation |
| Thu. | 21 | Orientation |
| Fri. | 22 | Orientation |
| Mon. | 25 | Classes Begin |
| Fri. | 29 | Last Day to Add Classes<br>Last Day to Drop with 80% Refund |

### September

| | | |
|---|---|---|
| Mon. | 1 | Labor Day Vacation |
| Tue. | 2 | Classes Resume |
| Fri. | 5 | Last Day to Drop with 70% Refund |
| Fri. | 12 | Last Day to Drop Classes<br>Last Day to Drop with 60% Refund |
| Fri. | 26 | Last Day to File "Petition to Graduate" For December Graduation |

### October

| | | |
|---|---|---|
| Fri. | 17 | Staff Development Day – No Classes |
| Fri. | 31 | Last Day to Withdraw with a "W" Grade |

### November

| | | |
|---|---|---|
| Thu. | 27 | Thanksgiving Day Vacation |
| Fri. | 28 | Thanksgiving Vacation |

### December

| | | |
|---|---|---|
| Mon. | 1 | Opening Day/Buck Season Vacation |
| Tue. | 2 | Classes Resume |
| Wed. | 17 | Last Day of Classes |
| Thu. | 18 | Grades Due in Student Records Office |

## 1981

## SPRING SEMESTER

### January

| | | |
|---|---|---|
| Tue. | 6 | Late Registration |
| Wed. | 7 | Orientation |
| Thu. | 8 | Orientation |
| Mon. | 12 | Classes Begin |
| Fri. | 16 | Last Day to Request Advanced Placement<br>Last Day to Add Classes<br>Last Day to Drop with 80% Refund |
| Fri. | 23 | Last Day to Drop with 70% Refund |
| Fri. | 30 | Last Day to Drop Classes<br>Last Day to Drop with 60% Refund |

### February

| | | |
|---|---|---|
| Mon. | 16 | Winter Vacation or Snow Make-Up |
| Tue. | 17 | Winter Vacation or Snow Make-Up |
| Wed. | 18 | Classes Resume |
| Fri. | 20 | Last Day to File "Petition to Graduate" for May Graduation |

### March

| | | |
|---|---|---|
| Fri. | 20 | Last Day to Withdraw with a "W" Grade |

### April

| | | |
|---|---|---|
| Fri. | 17 | Spring Vacation or Snow Make-Up |
| Mon. | 20 | Spring Vacation or Snow Make-Up |
| Tue. | 21 | Classes Resume |

### May

| | | |
|---|---|---|
| Tue. | 5 | Last Day of Classes |
| Wed. | 6 | Advanced Placement Day<br>Grades Due in Student Records Office |
| Thu. | 7 | Orientation |
| Fri. | 8 | Orientation |
| Sat. | 9 | Commencement |

Please send me an Application for Admission form to
THE WILLIAMSPORT AREA COMMUNITY COLLEGE

Name _____

Address _____ Tel. No. _____

City _____ State _____ Zip Code _____

High School _____ Year of Graduation _____

College (s) _____

I am interested in the _____ Curriculum _____

I would like further information about _____

_____

_____

_____

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Name _____

Address _____ Tel. No. _____

City _____ State _____ Zip Code _____

High School _____ Year of Graduation _____

College (s) _____

I am interested in the _____ Curriculum _____

I would like further information about _____

_____

_____

_____

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IN THE
UNITED STATES

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1005 West Third Street
Williamsport, Pennsylvania 17701

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IN THE
UNITED STATES

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1005 West Third Street
Williamsport, Pennsylvania 17701

College Offices are open throughout the year, except on official College holidays, from 8:00 A.M. to 4:00 P.M. Monday through Friday.

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The Community is our Campus